THE BUILDER

a Journal for the

ARCHITECT & CONSTRUCTOR

VOL. CLVI JANUARY 13 1939 No. 5006

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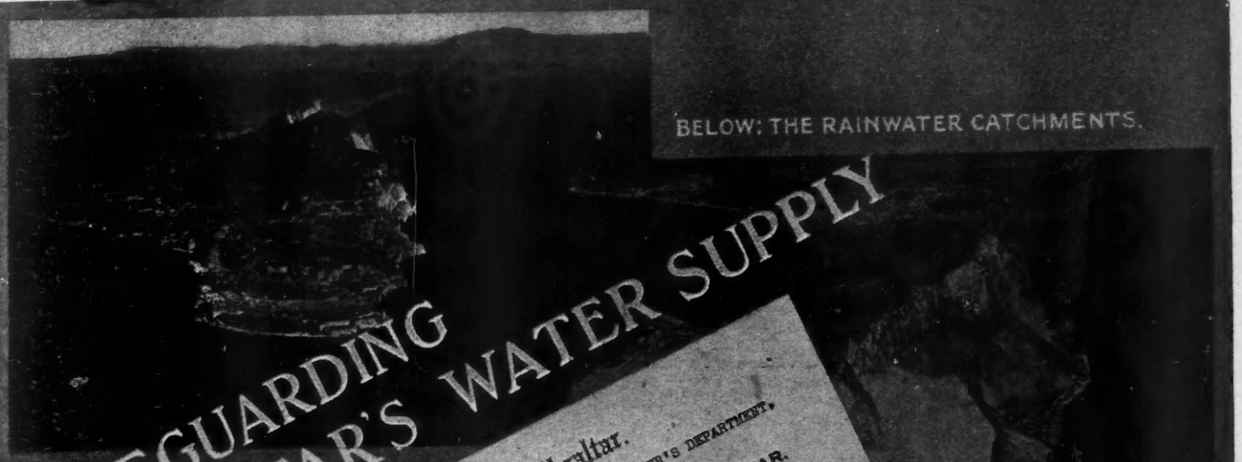
EVERY FRIDAY 9D.

THE BUILDER LIMITED

CATHERINE STREET AND YORK STREET, ALDWYCH, LONDON, W.C.2

Telegrams: "The Builder" (Rand) London Telephone: Temple Bar 6251-2-3



BELOW: THE RAINWATER CATCHMENTS.

SAFEGUARDING GIBRALTAR'S WATER SUPPLY

City Council of Gibraltar.
CITY ENGINEER'S DEPARTMENT,
CITY HALL,
GIBRALTAR.
30th July, 1935.

No.

Messrs Kerner-Greenwood & Co.Ltd.,
King's Lynn,
England.

Dear Sirs,

Many thanks for your letter of the 25rd instant. If Mr. Donovan sends a copy of his aerial photograph of the rain water catchments I shall be pleased.

I am now proceeding with the rock excavation for new Reservoir No.8 which will make our bomb proof storage capacity equal to twelve million gallons.

With regard to the two last completed reservoirs each of 1¼ million gallons capacity which have a Pudlo cavity filler and also a Pudlo plaster internal finishing, these concrete reservoirs have been filled with water up to 21 feet deep and have stood for long periods without any detectable or measurable losses by absorption.

Yours faithfully,

M.Inst.C.E.,F.S.I.
City Engineer.

ONE OF THE RESERVOIRS

'PUDLO'
BRAND
CEMENT WATERPROOFER.

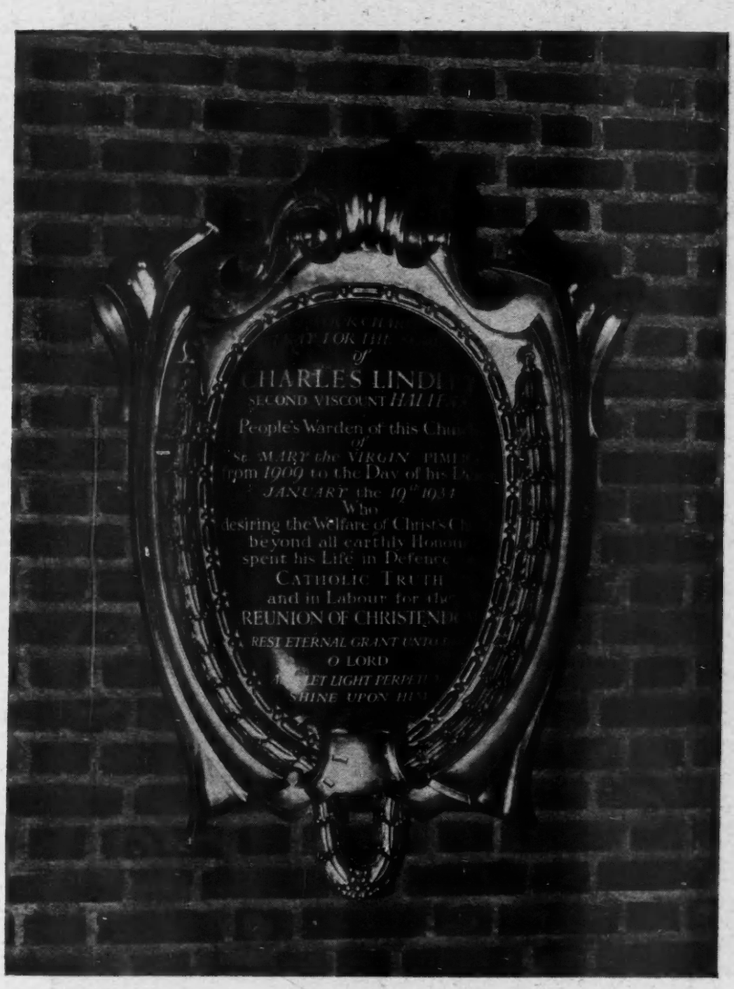
KERNER-GREENWOOD & COMPANY LIMITED.
ST. ANN'S, KING'S LYNN.

THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

Vol. CLVI JANUARY 13 1939 No. 5006



A MEMORIAL TABLET

Erected in the Church of St. Mary the Virgin, Pimlico, S.W., this Tablet is to the memory of Charles Lindley, second Viscount Halifax. It has been designed by Mr. H. S. Goodhart-Rendel, F.R.I.B.A.

COMING EVENTS

Tuesday, January 17.

Housing Centre. Luncheon. Alderman A. T. Pike on "Reconditioning Problems." 1 p.m.

Hammersmith School of Building and Arts and Crafts. Lecture on "Manufacture of Copper Tubes and Fittings." Lime-grove, W.12.

Institution of Heating and Ventilating Engineers (London and District Branch). Mr. J. H. Bryant on "Some Notes on Engineering Works in Switzerland." 39, Victoria-street, S.W.1. 6.45 p.m.

Institution of Civil Engineers. Joint meeting with the British Section, Société des Ingénieurs Civils de France, and the Institution of Structural Engineers. Monsieur Fauconnier on "The Strengthening of the Austerlitz Bridge in Paris by Electric Arc Welding." 6 p.m.

Wednesday, January 18.

Hackney Technical Institute. Mr. A. D. Cowper on "Limes and Plasters." 8.15 p.m.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "Roman Architecture (B.C. 146-365 A.D.): Ancient Rome. Town Planning. Roman Forums. Rectangular Temples." 6 p.m.

Institution of Structural Engineers (Lancashire and Cheshire Branch). Mr. R. Heywood on "Road Bridges." City Technical College, Liverpool. 7 p.m.

Building Centre. Mr. P. G. Bowie on "Foundations and Reinforced Concrete Structures." 158, New Bond-street, W.1. 5.30 p.m.

Institution of Structural Engineers (Scottish Branch). Mr. S. Bylander on "Steelwork in Buildings: Thirty Years' Progress." 129, Bath-street, Glasgow. 7.15 p.m.

Wednesday-Tuesday, January 18-31.

Housing Centre. Exhibition of the London Society Competition Drawings for the Cromwell-road Extension.

Thursday, January 19.

Hackney Technical Institute. Mr. B. Butterworth on "Clay Bricks and other Burnt Clay Products." 8.15 p.m.

Friday, January 20.

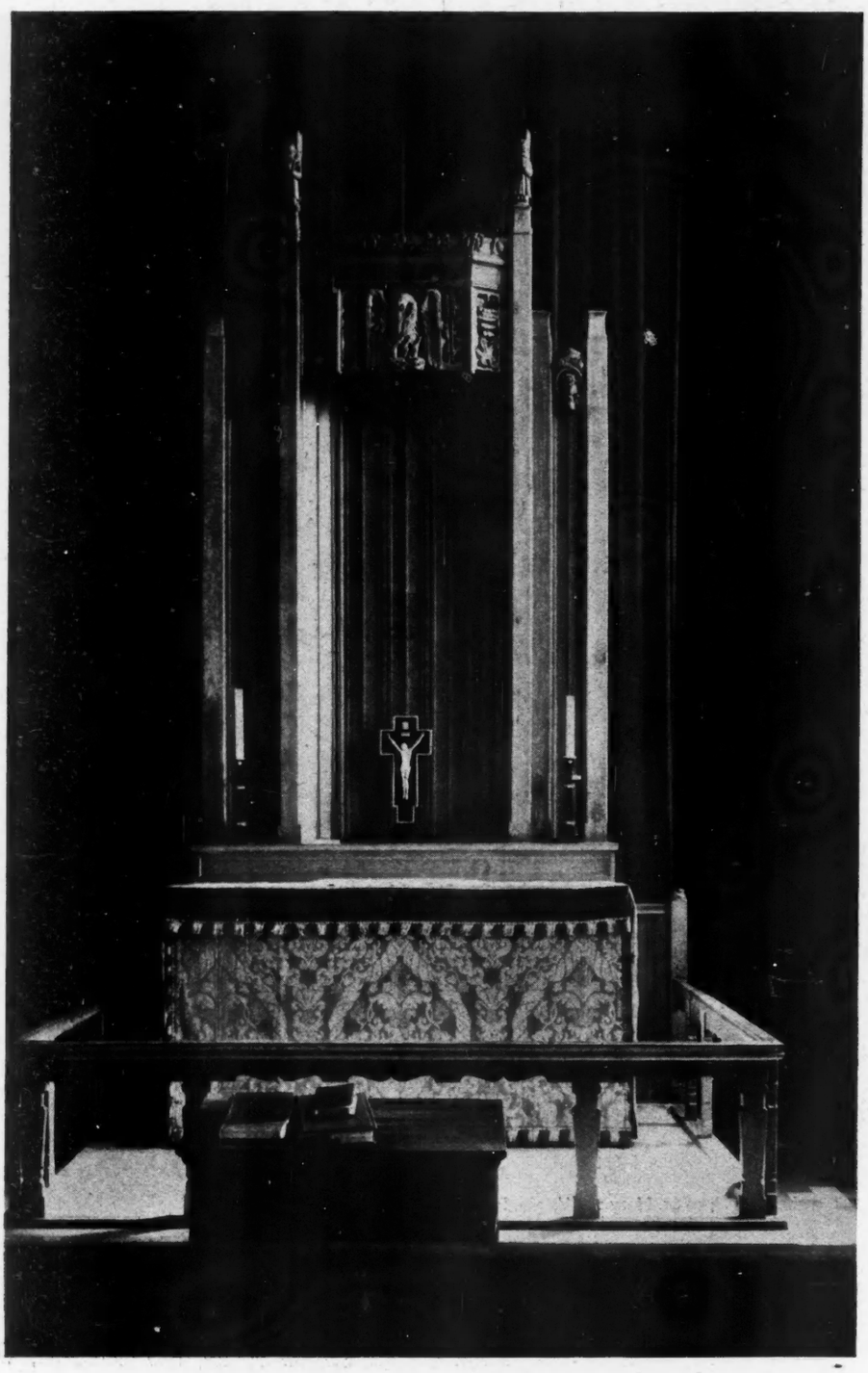
Institution of Structural Engineers (Midland Counties Branch). Mr. W. H. Veal on "Canal Bridges—Notes of Tests on Brick Arches and Reconstruction Schemes." James Watt Memorial Institute, Birmingham. 6.30 p.m.

Architectural Association. Mr. A. S. G. Butler on "Regional Building in the British Isles: East Anglia." 8.30 p.m.

London Society. Mrs. Hugh Dalton on "A Green Belt for London." 5 p.m.

Monday, January 23.

Royal Institute of British Architects. President's Address to Students. Presentation of Medals and Prizes, 1939. 8.30 p.m.



SHRINE IN THE MANCHESTER REGIMENT CHAPEL, MANCHESTER CATHEDRAL.

Recently completed, this Shrine has been placed in the Manchester Regiment Chapel in Manchester Cathedral. The Architect is MR. J. HUBERT WORTHINGTON, M.A., F.R.I.B.A. (Messrs. Thomas Worthington and Sons).

STOCKTAKING

TO look forward to a happy and prosperous New Year has become almost an instinct in those who find no satisfaction in pessimism. From the present economic and political situation either optimism or gloomy foreboding may be extracted at will; and there are some, no doubt, who remain uncheered by the real blessings which recent events have established, however precariously. These will read into the fact of peace no more than a postponement of conflict, and, so strange is the character of the type, they derive some satisfaction from being able to say, "I told you so," if Fortune should temporarily cease to smile.

For our part, we believe that the New Year provides an excellent opportunity for the optimists to make their case known, and to reassert their faith in the future. They have had little support from their fellows. The daily Press seems to have conspired, in a rivalry of headlines, to make its readers' flesh creep. A section of the politicians has refused to believe in the fact of peace. The faint-hearted are encouraged to read into the country's determination to be strong a sign of inevitable doom.

If the newspapers would transfer to the front page those cheering items about good trade, and the politicians would concentrate a little more upon the business interests of this country, much benefit should follow, for a strong and prosperous Britain is the surest guarantee of world peace that can be found.

We do not propose to invade the field of Party politics, however, and we have approached it so nearly only as a prelude to a brief glance at the past year in the building trade, which, as the most important of our industries, cannot entirely escape the political atmosphere.

Last New Year's Day marked the end of a full year's work in rearmament. Many had contemplated with a certain amount of misgiving the inevitable disturbance which this immense programme seemed bound to create in the normal field of trade. The volume of building work had mounted rapidly in that period, and at times there had been some shortage of material, chiefly in the steel trade, which hindered normal building work. That first flood of factory building has achieved its purpose and the recession in the volume of building work during the past year arises mainly from that reason and need cause no serious misgivings.

In the same period there has been a marked falling off in speculative building as a result of the intensive programme which has been carried through since the war. Yet if it were possible to extract from the volume of building work carried out in 1938 that to which the title of "normal" could be rightly applied, we believe we should find the figures most encouraging. It is, after all, normal business which stands for the health of trade, and in these facts we may find much to encourage us in the future.

While Air Raids Precautions cannot, we fear, be described as "normal" business, it would seem that the provision of adequate shelters—which appear to connote structural work, either in strengthening existing buildings; forming shelters within new buildings; and deep bombproof shelters (at present a vexed question)—is likely to provide a considerable amount of work for the constructional trades.

Progress has been held back by the lack of a definite Governmental policy (if we except the programme of light steel shelters, which has had a far from encouraging reception). Many points at issue will be found to be analysed in the Special Supplement on Air Raids Protection, which accompanies this issue. In this, Mr. Oscar Bayne examines theory and details practice in so far as the structural problems are concerned. We recommend the Supplement to every person connected or interested in this urgent matter.

Temporary perplexities have resulted in a considerable accumulation of arrears in repairs, reconstructions, and developments, all of which are now exerting a pressure to which the prudent business man will yield steadily, and the sooner the better for all concerned.

Architects will look back upon this year with some satisfaction. For the first time for many years the private architect has been admitted into the field of official architecture, as a reinforcement at a time of great pressure. We believe he has justified his admission, and has shown the versatility of the general practitioner. But more important still is the legal status he has acquired by the Registration Amending Act, which, having become law this summer, will make it an offence for men who have no trained qualifications to call themselves "architects." The fruits of this important measure have yet to be gathered in, but we believe the future of the architect is brighter than ever before as a result of this wise law. That the original and very imperfect Act, passed only after much bitter contention, should have been so quickly and satisfactorily amended, is a tribute to the energy and wisdom of its promoters, among whom the R.I.B.A. stands as the representative centre-piece.

The financial readjustments which the Institute is at present making might be considered as an anti-climax to this achievement if we were not well aware that the situation is well in hand, and causes no dismay at headquarters. Those members who believe the proper course to adopt is to raise subscriptions all round are in no sense in opposition to the present *regime*, but are as anxious as any to see matters adjusted in a permanent and orderly way. The future of the Institute is of particular concern to the rising generation, and of too great importance generally to be treated in anything but an earnest spirit.

The proper training of the younger section of the profession is also a subject under review, and it is no secret that there is a certain disquiet abroad as to whether the present system fulfils all at which it aims. The whole subject of education is one which must always remain sufficiently elastic to suffer revision when experience dictates the wisdom of such a course, and we feel that such adjustments as may prove necessary will be welded on to the existing order without the wasteful effect of a complete revolution.

As to the future, it needs, most of all, courage and faith in the kindness of Fortune. The community must learn to venture far without awaiting a certain picture of the future, for which it will otherwise wait for ever. The second lesson of the immediate past, from which we should profit in the future, is that it is to normal and productive trade only that we can look for prosperity. That temporary and artificial impetus which the arms programme has given to trade can have no lasting benefit, and we must do nothing to prolong this unfortunately necessary activity beyond the essential time it will need for fruition. When that time comes all our efforts will be needed to divert the energy and ingenuity of the community back into the channels of healthy trade and enterprise.

It may well be that that welcome time will arrive sooner than we dare now hope.

It is, therefore, in a healthily optimistic frame of mind that we wish our readers a happy and prosperous New Year. For the architects we wish a flow of interesting work, and for the builders, contracts in which they can give good measure in service for the reward of a fair profit. For the public we wish their enterprise to bring forth the best from the industry we represent, an industry which holds the key position in our social order.

NOTES AND NEWS

The Royal Gold Medal: Mr. Percy Thomas Nominated.

THE Council of the R.I.B.A., on Monday, nominated Mr. Percy Edward Thomas, O.B.E. (Past-President), to receive the Royal Gold Medal for 1939. After the nomination has been confirmed at the next meeting of the Council, the name will be submitted to the King.

At 55, Mr. Thomas is not only one of the youngest men to be nominated for the Medal, he will also join the very small band of architects practising in the provinces who have received the honour. In the last thirty years only the late Sir Rowand Anderson (in 1916) and Sir Percy Worthington (1930) have been medallists.

Mr. Thomas's selection will give general satisfaction. Not only have his buildings been many in number and scholarly in character, but he was himself one of the most hard-working and popular Presidents of recent years. Our readers will, we know, join us in congratulating Mr. Thomas on being nominated for the highest honour that British Architecture can confer.

***

Ulster Architects and Registration.

AN Order by the King in Council—published in the "London Gazette" on December 23, and made in pursuance of a resolution passed by both Houses of the Parliament of Northern Ireland—extends the Architects' Registration Act, 1938, to Northern Ireland.

***

The Architects' Benevolent Society: "A Generous Offer."

MAY we remind our readers that the offer made by "Architect" in our issue of December 16—to double all subscriptions or donations to the Society's funds made by readers up to a limit of £30—was extended in his letter published in our last issue? Also, that a quantity surveyor has offered to do the same? This means that for every guinea received by us the A.B.S. will benefit to the extent of three guineas. In order that this opportunity may be made the fullest use of, we ask for the widest measure of support for a deserving and greatly needed work.

***

A Memorial Library Competition, Brussels.

MR. HERBERT J. ROWSE, F.R.I.B.A., has been appointed to serve on a jury to adjudicate a competition, open to Belgian architects only, for the King Albert Memorial Library at Brussels. He is one of three foreign architects invited, the others being M. J. Kaufmann, of Berne, and M. E. Crevel, architect to the City of Paris. The jury in all number 12 persons.

***

Honorary Corresponding A.I.A. Member.

MR. H. M. FLETCHER, F.R.I.B.A., has been elected an Honorary Corresponding Member of the American Institute of Architects.

***

Sir Herbert Baker: A Rhodes Trust Tribute.

A PORTRAIT of Sir Herbert Baker, R.A., K.C.I.E., has been purchased by the Rhodes Trust for presentation to the National Gallery of South Africa at Capetown. The picture is a replica of the original portrait painted by Mr. Charles H. Thompson, of St. Buryan, who has long been a personal friend of Sir Herbert and was a friend and disciple of G. F. Watts, traces of whose influence are to be seen in the work.

***

Stone-built Almshouses, Moretonhampstead.

UNLESS repair and reconditioning can be carried out, the old stone-built almshouses with their thatched roofs that stand on the hill at one of the approaches to Moretonhampstead, Devon, will become derelict. They were built in 1637. An appeal for the funds necessary to carry out the work is being made and subscriptions may be sent to Mr. T. Bartlett, the hon. treasurer for the appeal, Lloyds Bank, Moretonhampstead. The Devon branch of the Council for the Preservation of Rural England has given its support and also a donation.

***

The Savoy Chapel: Proposed Alterations.

IT is announced from Buckingham Palace that the Chapel of the Savoy will in future be regarded as the Chapel of the Royal Victoria Order. Shortly, alterations are to be made so that the chapel may be suitable for the annual service of the Order. The King and Queen have intimated that they will attend the first service in the autumn.

***

Epstein Collection to be Exhibited.

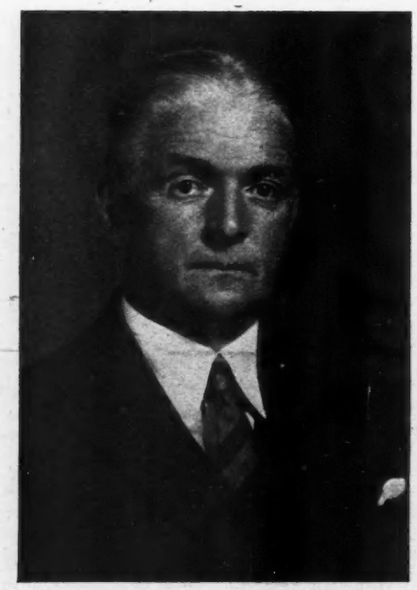
MR. JACOB EPSTEIN has decided to exhibit his famous collection of pictures by Matthew Smith. It will be shown at the Leicester Galleries, Leicester-square, for three weeks from January 13, and the admission proceeds will go to Lord Baldwin's Refugee Fund. Mr. Epstein was one of the first to discover the work of this artist, and for over 20 years he has acquired examples of his best work, many of which have not previously been exhibited.

***

The Burlington Fine Arts Club Exhibition.

FORTUNATE indeed are those connoisseurs and art lovers who receive an invitation to this exhibition. The present one includes pictures, drawings, furniture and *objets d'art*, among them being examples of the earlier Victorian period. The exhibits here are, as usual, of the finest; one is almost sure to find some which are new to one—that is, examples not met with elsewhere.

Of particular interest are the paintings by Wm. Etty, R.A. (1787-1849), which have a vogue just now. To mention but one, No. 9, "Standard Bearer" (lent by Lord Fairhaven), is a magnificent example of colour and flesh painting, at which Etty excelled. Another gem is No. 18, "Cardinal Marino Grimani," by Jacopo Tintoretto (1512-1594) — a noble portrait. Several fine examples of the work of Lucas Cranach (1472-1533) are others to notice. The furniture is well up to the Society's selective standards.



MR. PERCY THOMAS, O.B.E., P-P.R.I.B.A.
Whose nomination as Royal Gold Medallist, 1939, is referred to on this page.

***

North Riding Schools: Architectural Appointments.

MR. L. H. BUCKNELL, F.R.I.B.A., and Mr. Hubert Bennett, A.R.I.B.A., have been nominated by North Riding Education Committee as architects for Beadlam senior school and Thornby senior and junior schools respectively.

***

Bomb-proof Car-parks: Activity in London.

A NUMBER of authorities in London are preparing plans for bomb-proof underground car-parks. That of the Holborn Borough Council for Russell-square was illustrated in our last issue, and other bodies with schemes in view are Finsbury Corporation (who propose a shelter under Finsbury-square) and the London County Council (who have two such schemes in view, one under Leicester-square and the other in Arnold-circus, Bethnal Green.

***

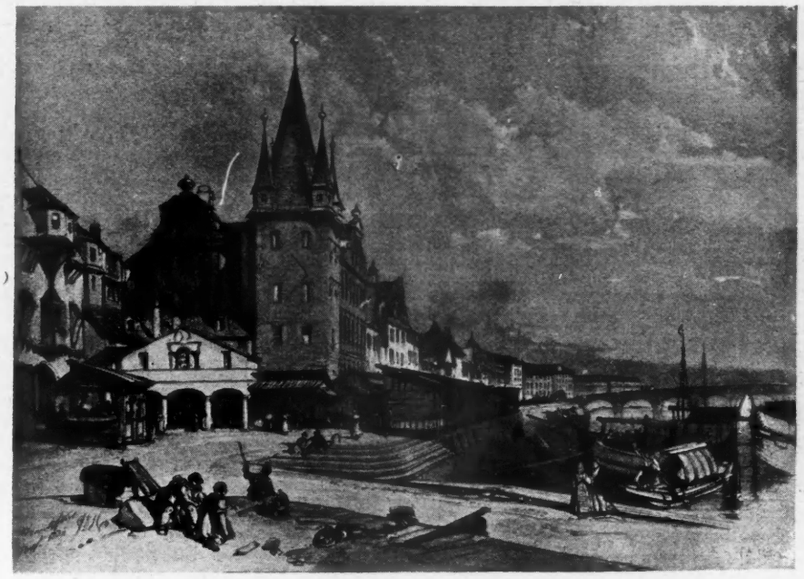
The Loss of Sports Grounds: Encroachment of Builders.

THE urgent importance of arresting the tendency for sports grounds and playing-fields to be absorbed by the builder is emphasised in a memorandum issued by the National Fitness Council for England and Wales. Evidence is available from all quarters, states the council, that the loss of such grounds to the builder is of almost daily occurrence, and it has become obvious that their preservation is quite as important as the provision of new ones. The memorandum draws attention to the powers of local authorities to acquire, lay out, and maintain lands for the purpose of playing-fields and let them at a nominal rent for that purpose. Attention is also drawn to the need for planning for provision of new grounds well in advance of requirements and, whenever practicable, of preserving private sports grounds, which, being drained and levelled, are the most valuable from the builders' point of view.

***

Adam Fireplaces: The "Raffles Touch" Again.

FROM the news that six Adam fireplaces have been stolen from a building at the corner of Fitzroy-square and Grafton-street, W., which is shortly to be added to the premises of the Metropolitan Ear, Nose and Throat Hospital, we gather that the profession followed by Bill Sikes and A. J. Raffles still contains an artist or two. A report of the theft states: "They had been carefully removed from their positions. Cornices had also been taken from over several of the doors, and wrought-iron balusters of great age showed signs of attempts to remove them." Those who wonder how such pieces are disposed of will be interested to hear the suggestion that the fireplaces are marketed abroad.



"FRANKFORT, AUGUST, 1834."

FROM A DRAWING BY J. D. HARDING (1797 - 1863). (See this page.)

Faculty of Architects and Surveyors.

THE City of London Branch of the Faculty of Architects and Surveyors are holding their annual dinner and dance at Frascati's Restaurant, Oxford-street, W.1, on Friday, February 17. Those wishing to attend are asked to communicate with the hon. secretary, Mr. W. F. G. Wyborn, F.F.A.S., F.N.A.A., 40, High Holborn, W.C.1.

***

The Royal Institution : Lectures before Easter.

SIR CHARLES BRESSEY, C.B., C.B.E., D.Sc.(Eng.), P.S.I., will contribute to the series of Friday evening discourses of the Royal Institution, 21, Albemarle-street, W.1, to be held before Easter, 1939, for on Friday, February 3, he will read what promises to be an interesting paper on "Bigger or Better London." Mr. Stanley Casson, M.A., F.S.A., Hon.A.R.I.B.A., also contributes to the series with a paper on "The Collapse of Ancient Civilisations: A Study of Archæological Evidence," on February 24. In the course of Saturday afternoon lectures on "Art and Industry," Mr. Frank Pick, Chairman of the Council for Art and Industry, will discuss, on January 28, "The Consumer's Point of View," and Mr. Eric Gill, LL.D., A.R.A., Hon.A.R.I.B.A., will take as the subject for his lecture on February 4 "The Secular and Sacred in Modern Industry."

***

Drawings by J. D. Harding (1797-1863).

AT a time when the camera has practically supplanted sketching, it is not without interest to illustrate some drawings made by J. D. Harding in the early part of the 19th century. As will be seen, they show thoroughness and accuracy, and certainly they are rendered with artistry. Harding, born at Deptford in 1797, received some lessons from Samuel Prout and exhibited at the R.A. at the age of 14. At 18 he was awarded a medal by the Society of Arts for an original landscape. He exhibited at the Old Water Colour Society, became an Associate in 1820 and a full member in 1821. He excelled as a lithographer. He twice visited the Continent and published lithographs entitled "Sketches at Home and Abroad." He died in 1863. It is to be regretted that sketching has declined, most probably due to the fact that with tours to-day often covering hundreds of miles, there is little time for sketching, and so the camera takes it place. Years ago the Architectural Association would choose a centre where members would sketch buildings of interest in the vicinity. We regret the modern tendency, for much good work was done in the old days; without doubt a sketch with a few figured dimensions implants on the mind more than snapshots. Sketching is a pleasant relaxation from the tee-square and drawing board, and we should like to see more done by students.

*** Arising out of the publication in our last issue of a drawing by Harding, Mr. Manning Robertson (in a letter published on page 110) draws attention to a similar drawing prepared by his great-uncle, R. H. Manning, from which it may be deduced that the latter accompanied Harding on a tour of the Continent in 1836.

***

Leicester Corporation's Architect : An Appointment.

MR. K. PALMER, A.R.I.B.A., estate manager to Leicester Corporation, has been appointed chief architect, in place of Mr. L. J. Hannaford, F.R.I.B.A., who has gone to Norwich as city architect.

***

A Town Planning Appointment, East Monmouthshire.

MR. M. E. TAYLOR, A.R.I.B.A., A.M.T.P.I., of Lancaster, has been invited to the position of Town Planning Officer to the East Monmouthshire Joint Planning Committee to prepare for them a planning scheme for a borough, two urban districts and four rural districts with a total area of 178,631 acres.

***

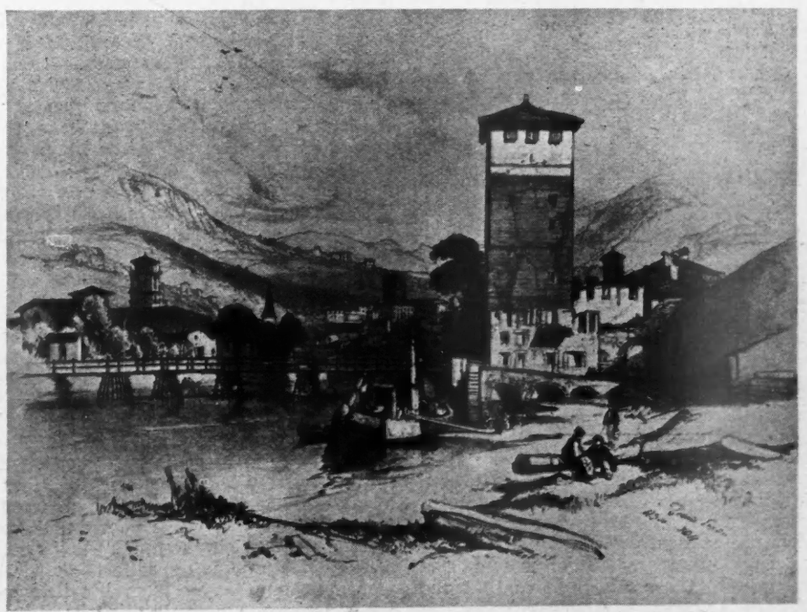
The Bradford City Architect : Mr. J. A. Fletcher's Retirement.

MR. J. A. FLETCHER, F.R.I.B.A., Bradford City Architect, is to retire on January 14 after 28 years' service with the Corporation. He was responsible for the design of a large number of buildings in the city. The Corporation City Architect's Department Sub-Committee has placed on record its appreciation of the way in which Mr. Fletcher has discharged his duties, and has also resolved that Mr. Harold Conolly, A.R.I.B.A., Deputy City Architect, be appointed acting City Architect for six months after Mr. Fletcher's retirement.

***

The Liverpool Land Steward : Mr. A. D. Jenkins Retired.

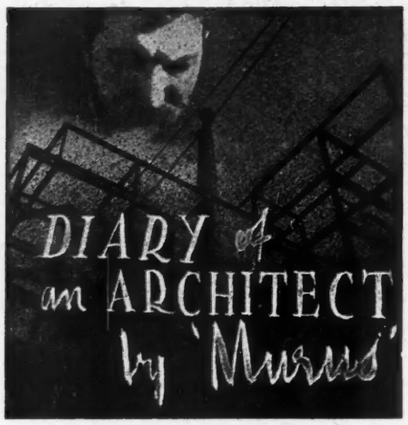
MR. A. D. JENKINS, F.S.I., Land Steward and Surveyor to Liverpool Corporation, retired on December 31 after 24 years' service. In addition to the management of the City's estates, he had supervised the designing and erection of building work totalling approximately £4,000,000. He had also acted as surveyor to the city justices.



"TRENTO, SEPTEMBER 20, 1834."

FROM A DRAWING BY J. D. HARDING.

"HE WHO SEEKS THE MIND'S IMPROVEMENT"



WHAT a year was 1938! How can I look back on these last twelve months and count up the marks, the total of which would put me on the credit side?

I thought of compiling a system of good conduct book-keeping—10 marks gained for any one thing accomplished, 10 marks lost for any one thing which was useless and had nothing in common with a full life. But I have come to the conclusion that such a book would be a snare and delusion. A good lecture, for instance, might be an informative thing—a valuable facet of one's education—and a dull dinner party might well be rated as a waste of time. Yet it is frighteningly possible that the lecture diverted one from any individual line of thought; and that the dinner party may have served the valuable purpose of making one appreciate the brighter things of life—a sort of necessary foil. Rather on the lines of the wise Polonius, who said: "Though this be madness, yet there's method in't."

* * *

In front of me is a book—the cover of which is embossed in gold, "Diary, 1938." Here is a tell-tale bunch of leaves from which, in retrospect, there is no escape. There are Private Views by the score, yet I doubt if my knowledge or appreciation of art has increased. A long list of theatre dates, yet I have spent few enjoyable evenings in the theatre. A host of appointments with architects, yet I have added little to my knowledge of the profession. Visits to new buildings, but no clue to a leader in contemporary architecture. A number of lectures without gaining much information. A certain amount of travelling which I rank as being the most important contribution to my year's activities.

* * *

It is a sad form of speculation. Just think, if one spends, say, four hours a day lunching and dining with people; attending exhibitions and visiting jobs; being on committees and drinking cocktails; then one has devoted 1,460 hours of the year, or 60 and 5-6th days of one's life to some form of culture and enjoyment. About two-thirds of this culture could be gained from the study of books and reviews and about an equal proportion could not be set down as enjoyment. On those two grounds, therefore, one could quite easily dismiss most forms of social activities and produce, as a result, a finer mind and a healthier body.

Social contact, of course, cannot be so easily dismissed, and it is certainly the basis of success for certain jobs and certain people. There definitely exist two classes of professional men. Those who achieve a sound practice by producing a sound organisation, and those who achieve a popular practice by being "in the know."

THOMAS TAIT, to take an example, gets little work from social contacts, and I would put his practice down as the most successful for 1938. Clients go to him because he is known as a sound and progressive man. In a similar way they approach CHARLES HOLDEN, and both these men could arrive at the office in the morning, work until the evening, return home and refuse all social invitations, and lose no work whatsoever. (Which is some sort of answer to those who believe that the golf club is the clue to success.)

On the other hand, certain designers refuse all invitations to those affairs connected with designers, and, instead, cultivate an entirely—shall we say—lay-social life. SIR EDWIN LUTYENS dines out most nights of the year; but you will rarely see him at architectural gatherings, unless as a guest of honour. SIR HERBERT BAKER, as another instance, does not particularly favour these society affairs, but he is intimate with many important people.

Provincial architects get there *via* the local reputation and lack of intensive competition; financial architects by City lunches and office meetings; official architects by industry and reliability; "civic" architects by competitions; "aristocratic" architects by society functions; industrial architects by business acquaintances; and literary architects by their intimacy with newspaper editors.

If you look down the list of MARS Group members, you will see the names of practically *all* the architects you are likely to see at architectural-cum-social functions. *Their* success is created by their being seen about and known as the "avant garde." Because of their reputation, however, among the profession, do not jump to the conclusion that they are more financially successful than the average provincial architect. This latter often makes a steady £1,000-£2,000 per annum, and that is not easy in London, even among the well-knowns.

It seems, in short, that if one is out for success (as opposed to fame), then an extensive social life is not necessary. Whichever walk of life you are in, you may find success if your practice is reliable and sound. If you want fame, then you must dine in society, or lunch with editors, or week-end with B.B.C. officials, or win competitions, or accept every architectural invitation, or even give lectures. In short, you must be in the news, and be prepared to sacrifice your private life to a set of public engagements.

* * *

So far as contact with "names" is concerned, there appears to have been a great deal to learn from the *positive* characters, some of the leaders in the profession.

OSCAR FABER is a good example of the man who knows what he is after, and lives for his job. In his office, perched on the top of Romney House in Westminster, is a large room thick with draughtsmen—twenty-five or thirty-five young and busy people. O. F. seems so much the life force of the office, and so opposite to Tait, who is almost shut away from his thirty or forty assistants. Faber is the driving force, and it is plain to see Tait likes his seclusion, but his grip on office organisation is none the less clear. GORDON JEEVES spreads an air of benevolence and easy manner over an office in Hanover-square which prides itself on the "happy family" idea. Assistants do not easily come and go in Hanover-square, and, talking of Jeeves, I would put my lunches with him as being among the most pleasant engagements of 1938. His practice, like T. P. BENNETT's, is huge, and, unlike T. P., he is leisurely and able to break away from "shop" easily.

* * *

T. P.'s office, a large house (decorated with 53 assistants and 100 perspectives) in Bloomsbury-square, is a hive of rather urgent industry. A busy man, and a busy office, indeed.

* * *

And then I seem to remember still more "names" that I have met and still more architects that I have known. There was LOUIS DE SOISSONS, in his office at Welwyn Garden City, who spends his week-days in St. James's-street and his week-ends in the country, working in both places consistently. There is RODNEY THOMAS, with whom I used to work in de Soissons's office, a designer that I have seen frequently this year, and whom I regard as having the finest possibilities as a designer—given the chance. He has the three qualities of form, function and æsthetic delight to a high degree, and is probably one of the most imaginative designers in the architectural profession.

Another such designer is GEORGE SIMONEK, who lectures at the Architectural Association in a Russian accent, with the word "sociological" as a comma to almost every sentence. He has a vision, an understanding of architecture, which goes beyond many of his English contemporaries. He is what might be called a promising young man.

Actually he is not (in character) unlike OVE AARUP, the well-known engineer, who has a similar kind of accent and a similar kind of mentality. I think that if Aarup were given the chance to work freely with architects he would achieve some fine results. His Penguin Pool at the Zoo, which was done with LUBETKIN, is an example; and Lubetkin, incidentally, I would put down as the man who has achieved most with contemporary architecture in the style that one can project into the future as being definite.

* * *

There are numbers of other successful people with whom I have come in contact, now fading into a rather dim background of "last year." LEON GOOSSENS, with his country cottage and Chelsea studio, plus a happy family; FRANCIS WATSON, the writer, who left England last week to spend a year in an Indian State where he is not likely to meet white people; A. R. THOMSON, the painter, recently elected to the Royal Academy, who stands out as being one of England's finest painters, and particularly of architectural murals (*e.g.*, the commission he recently executed for VINCENT HARRIS at Essex County Hall, Chelmsford); and the DOWAGER LADY SHIFFNER, who owns a tract of country near Lewes, and is gradually taking all the old and derelict property on this estate and is restoring it with the aid of the local builders, refusing meanwhile to encourage new work of the speculative builder's kind.

C. R. W. NEVINSON, the painter, is one of the most lively and amusing com-

panions of the year, and the dinner at the Chelsea Arts Club, with A. P. HERBERT, LORD DUNSANY, LORD HORDER, SIR JAMES JEANS, SIR WILLIAM WILCOX, LORD MILNE and ADMIRAL SIR ROGER KEYES as the speakers, was the most enjoyable function of the last twelve months. The Housing Exhibition at the R.I.B.A., opened by J. B. PRIESTLEY and ELLEN WILKINSON, was the most successful exhibition (opening!); "Elephant in Arcady" the most successful play, from my own point of view.

* * *

The most interesting woman architect was JOCELYN ADBURGHAM, and her work at Nonnington College for a new gymnasium I would put down as being one of the most sincere buildings of the year, although it is very little known.

Few readers will need to be reminded of the futility of attempting a clean sheet on January 1 of each year. CARLYLE, in his "Sartor Resartus," wrote a deep truth:—

"The curtains of yesterday drop down, the curtains of to-morrow roll up; but yesterday and to-morrow both *are*."

Mnrus

THE TREND OF 1938

By HOWARD ROBERTSON, F.R.I.B.A., S.A.D.G.

THE year which is past will be remembered as the one in which Europe stood on the brink of war, with the prospect, for practically every normal man, of relinquishing his life-time occupations and turning to the specialised business of defending and attacking.

In the wake of this upheaval, but actually resulting from its basic causes, come problems which are having their repercussions throughout the building industries in the major European countries, and particularly in the Architectural profession.

Dictatorship Architecture.

Reports from Germany, Austria, and Hungary show that the future of the individual architect is depending more and more on his "party" attitude and affiliations, and less and less on his ability and past record. To be dispossessed of any architectural future after a life-time of successful and devoted work is the lot of hundreds of architects of universal reputation. And to have their creative faculties harnessed to a bureaucratic direction is the fate of many of those still in favour. Increasingly is style in architecture being dictated by those who regard it as a medium for the expression of the outlook of a régime rather than that of individual or collective needs.

Here is the thin end of a wedge which might easily be driven home in England. Already, with our large estates, our Commissioners, our panels, we have the nucleus of an organisation to control design, resulting at times in a complete ham-stringing of the architect who has the misfortune to come under such restrictions. Like nearly all measures of control, each step seems logical and reasonable at the outset; and the first results are often good.

This comment may be made regarding the type of design which is emerging out of the building policy of the Nazi régime in Germany. Some of the recent buildings for the party—"führer schools"—for instance, are sober and dignified, if a trifle lifeless and coarse in feeling. The unity resulting from the studied adoption of this manner is an asset to civic design. But the danger will come when the architect finds himself unable to play on any other theme.

Regimentation of Design.

We see similar results, though for less essential reasons, in the new architecture of Park-lane, in much of which the hand of control seems to wear a Georgian glove. There is a certain unity, but the Georgian of these big flats is like the Eton jacket on the hulking schoolboy, a thing of awkward accommodation. What a pity that a general harmony could not have been imposed, without such a dragooning of the proportions of openings. No vital design can grow out of an imposed regimentation, and Park-lane proves it.

The big blocks of flats along Albert-road, where Robert Atkinson and A. F. B. Anderson designed their "Stockleigh Hall," awarded the London Architecture Medal, are much more interesting. They have big windows to frame fine views, and some have balconies in which one can sit, at any rate sideways. The designs are nearly all by good architects, and justify the clients' confidence. Plans of buildings like "Viceroy Court," and those of the many blocks typified by the work of T. P. Bennett, are clever and able. They only suffer from the trend of the times in designing for living in London, the metropolis having been described by A. J. A. Symons in a public lecture at the R.I.B.A. as "the greatest city in the world sliding down an architectural inclined plane, with an ever-increasing momentum, towards the bottomless pit of the minimum life." It is true that blocks of flats get larger and larger, the rooms smaller and lower and dearer. Architects are becoming expert packers, and there are specialists in this new technique of squeezing physical sizes, with the result that, alas, the soul of man is apt to be squeezed too.

People are driven forth from these kitchenette-bedrooms either into the communal luxury on the liveried entrance floor, or out into the cinemas. Here, curiously enough, a certain liberality reigns, and vestibules tend rather to gain in amplitude and seats in comfort. There is some clever and able design applied to this cinema problem, and England fairly well holds her own in this field, which is certainly commercialised but can produce designs like the Odeon at Swiss Cottage. Nevertheless, one would like to see a "Curzon" tried on a bigger scale, with its inherently sound taste.

Another phase of design in which England has leapt forward is that of exhibitions. Already the routine shows at Olympia and Earls Court were showing a progressive betterment of layout and stand design; but the Glasgow Exhibition has placed us on a level with the best.

Comparisons with the Paris Exhibition are not valid, for Glasgow had no major foreign pavilions. It did, however, have plenty of everything that an exhibition demands and was very free from buildings below the standard. Thomas Tait and his colleagues showed a sure touch in composition and great powers of organisation in completing to time, and in achieving a British idiom amongst the international phraseology of temporary exhibition structures.

That success of this kind is not the result of a happy chance is borne out by the spoken thoughts of those who reflect on the meaning of architecture; Goodhart-Rendel, for instance, in his presidential address to students, said that "the experience of the world is long enough to show that architecture not conditioned by reason can have no continuous validity." Another important expression of opinion, demonstrated by fact, was the exhibition of the MARS Group last Spring. The Group has sincere convictions, and a definite attitude of mind. And however one-sided the tendencies of the show, no one can deny the brilliance of its presentation.

Indeed, the year has been a good one for the character and quality of its exhibitions, for besides the "Health, Sport and Fitness" display at the R.I.B.A., there was the "Small House Exhibition," where the needs of the man of moderate means were studied, a fact which does not blind one to the truth that England has very largely lost its natural good tradition in house building, with trained architects as the only real bulwark against a total general decline. A visit to, say, any good Kentish village, returning to London through the new speculative developments, affords a painful comparison which shows how little pride is left and how vulgar must be the character of the present-day demand.

It is refreshing to turn to good current work of another type; to see excellent houses among the moderns of Frognal, the finely massed schools and buildings for the Miners' Welfare Committee; and to read the bold recommendations of the report which Sir Charles Bressey has compiled with the architectural collaboration of Sir Edwin Lutyens.

The R.A.

Sir Edwin has just received the honour of election as President of the Royal Academy. No architect in England has a better title to it, for every building by Sir Edwin bears the stamp of distinction. His masterpieces deserve the description; and even when one does not appreciate his tendencies in certain works, one can never regard them as negligible or unimportant. In the world to-day there are few architects who can be classed with him as of the very first rank.

Other and younger architects have been honoured this year by the Royal Academy: C. H. James and Edward Maufe. And these elections, explicable as they are, make one think inevitably of equally inexplicable omissions in the past and present.

The outsider never gets behind the scenes. But he occasionally has a glimpse of inner workings, when such an old hand as Professor Reilly lifts the veil as he has just done in his reminiscences "Scaffolding in the Sky." The book is important as presenting a picture of architecture and academic relations thereto in the present era. Quite different, and important, too, is Whistler's book on Sir John Vanbrugh and his work, showing how even in his day they had their crises, and clients — both private and public — indulged their own particular brand of baiting their architects. But out of it all Vanbrugh emerges as a master sculptor in the masses and elements of architecture.

The trend of 1938 has been a mixed one, interrupted as we all know by political upheavals. But one feels that during the last few days there are appearing signs of a vigorous governmental revival of spirit and energy which may well be reflected in architecture and all its allied activities.

HOLLAND REVISITED

By MARTIN S. BRIGGS, F.R.I.B.A.

FIFTY years ago architects visited Holland in large numbers to collect frisky details which they translated into terra-cotta, as sundry buildings in Mayfair and South Kensington abundantly testify to-day. Ten years ago they began to revisit Holland to learn how to strip their designs of all the naughtiness of the 'nineties, and then Hilversum became their Mecca—a very attractive Mecca, too. My own visit last summer had no doctrinaire purpose in either direction. It was a holiday pure and simple, an endeavour to see Dutch life and landscape, away from the largest cities. I was mounted on a bicycle, which, in Holland, as in Denmark, is admittedly the ideal means of locomotion for a country that is too flat for walking and too small for motoring. On previous occasions I had visited the more famous towns—Amsterdam, The Hague, Delft, Haarlem, Leiden—and, of course, Zeeland and Marken; so this time I planned an itinerary from the Hook of Holland through Gouda and Utrecht to Arnhem, thence north through Zwolle to Leeuwarden in Friesland, returning via Enkhuizen and Alkmaar to the Hook, a distance, including sundry detours, of about 400 miles.

The Drommedaris Tower: Enkhuizen M.S.B. 20.8.1938

The Sassenpoort · Zwolle M.S.B 15 8 1938

In all these towns, many examples of modern architecture are to be seen; but, abreast of occasional flat roofs and stark elevations, there is a much larger amount of small domestic building where tiled roofs and bay windows continue to prevail with an effort at compromise between the English garden suburb and the Dutch tradition. Large sheets of highly polished plate-glass are used in all the sitting-room windows. Everywhere I was impressed by the tenacity with which the Dutch retain the characteristics immortalised in the paintings of Vermeer and De Hoogh—extreme orderliness and neatness, an intense love of home and all the household goods, and a passion for colour and flowers. Holland must be a paradise for house-painters and for the vendors of paint and polish. Most of the old city gate-towers have recently been restored, and their gorgeous heraldry has been picked out in brilliant colours, together with the gay shutters of their little windows.

On my first day's progress from the Hook of Holland to Gouda, I threaded my way along canal banks and over level-crossings, through a landscape composed of kitchen-gardens and factory chimneys in about equal parts. At Delft, I found that the chief change since my last visit was the restoration of the Nieuwe Kerk, now approaching completion after many years' work. This famous building, erected in the fifteenth century, has been the mausoleum of all the rulers of Holland since William of Orange (d. 1584), and the cost of restoration was subscribed by the nation as a gift to the present Queen on the 25th anniversary of her reign in 1923. Like most of the great churches in Holland, it became Protestant in the sixteenth century, and its internal appearance suffered thereby. But the present restoration has restored its original beauty without entirely removing its Protestant character. The whitewash and plaster has been stripped from the walls and the original dull red brickwork exposed, admirably designed wooden seating has been installed, and fine stained glass has

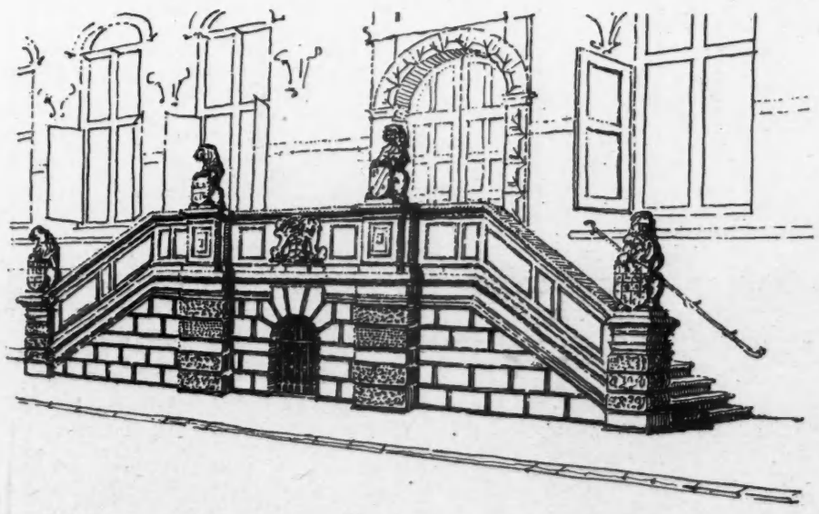
been inserted in the noble range of windows round the choir. Work is now in progress on the exterior. Across the Groote Markt the Raadhuis or Stadhuis (town hall) is also being restored. Otherwise the central part of Delft retains its normal atmosphere of picturesque peace and sleepy canals. But just outside the quaint Oostpoort which figures in Vermeer's famous picture of the city, there is now a by-pass road, and a mile further one crosses a magnificent arterial road from The Hague to Rotterdam. A similar road now connects The Hague with Gouda, and appears to be under construction towards Utrecht.

Gouda (pronounced in Holland "Howda") is surrounded by a wide moat (Singel) and intersected by canals. But it does not possess attractive gardens along the moat, or any fanciful gate-towers, and is not a particularly interesting town. The market-place, however, contains a striking Gothic town hall, and near it is the huge Groote Kerk of St. John, rebuilt in 1552-59, and said to be the largest in Holland. Be this as it may, it certainly possesses the finest series of stained-glass windows in that country, about 30 in number, remarkable as much for their date (1556-1603) as for their size and beauty. Bædeker makes the acute criticism that they "illustrate the transition from the ecclesiastical style of glass-painting to the heraldic and allegorical style of secular art." But, though the guide-books admitted their excellence, these wonderful windows had suffered from neglect when, in 1901, there began an elaborate work of cleaning and restoration which finished only in 1936. My own visit fortunately synchronised with an exhibition of the small-scale sketches and the full-size cartoons made by the original artists, a most remarkable display. The chief painters were two brothers, Dirk and Wouter Crabreth, of Gouda. The outstanding feature of the designs is the marvellous heraldry, bold in drawing and brilliant in colouring. But the figures, whether of Biblical or allegorical personages, royal patrons or private donors, are also of great merit, and the draughtsmanship of the cartoons, so miraculously preserved, is superb. Incidentally, the artists display considerable knowledge of Roman architecture in their backgrounds to some of the Biblical scenes.

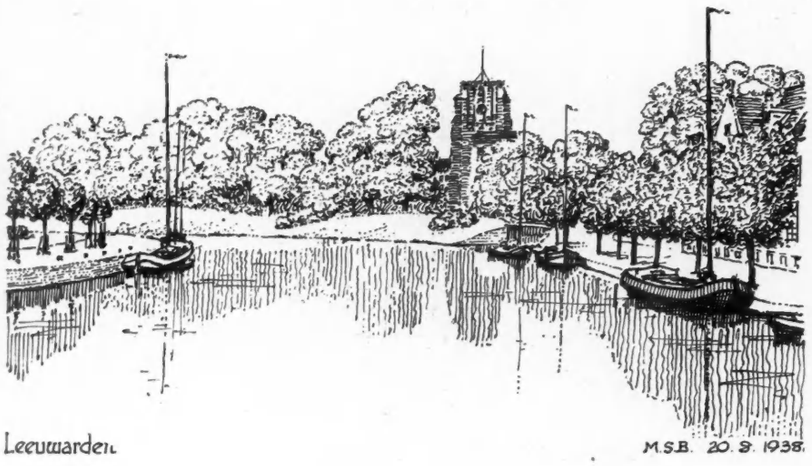
The Weigh House : Alkmaar M.S.B. 22. 8. 1938

From Gouda I proceeded, along wooded canal banks all the way, via the charming villages of Oudewater and Woerden, to Utrecht. This busy city contains at least two well-known buildings of the so-called "early modernist" movement, viz., the Post Office (1918-24) and the State Railway Offices (1918). The former seems to hold its own fairly well as a bold design with a central hall of striking originality, but the latter already appears distinctly *démodé* to modern eyes accustomed to the starker refinement of Hilversum; and perhaps the burghers of Utrecht feel that way about it, for they are allowing ampelopsis to creep all over its façade. At any rate, the large blocks of new buildings, partly used for the annual International Fair, which have recently been erected west of the untidy Vreeburg, show an advance upon the much-illustrated "masterpieces" of twenty years ago. In the very latest mode are a large café with an illuminated tower near the Viebrug, and a fine new gymnasium. As to Utrecht's older buildings, the Dom Kerk is still under restoration, and the empty space where the nave once stood, between the great tower and the choir, is now being excavated to reveal the foundations. Roman remains have already been found there, but the most sensational recent find in Utrecht was the discovery in 1930, far beneath the bed of a canal, of a very ancient boat of great size and in excellent preservation. This is exhibited in the vaulted crypt of the monastery which now forms a part of the admirable Central Museum of the city. For the rest, Utrecht possesses charming gardens on the site of its former ramparts, it is intersected by picturesque canals and a wide moat formed by a branch of the ubiquitous Rhine, and on certain days visitors may hear a carillon-concert of an hour's duration from the famous steeple.

Soon after quitting Utrecht for Arnhem I left the flat canal-country behind and



Entrance to the Kanselarij : Leeuwarden M.S.B. 18. 8. 1938



entered a beautiful wooded district. At Rhenen on the Rhine there is a noble Gothic church, now being restored. Approaching Arnhem one enters a lovely area of pinewoods and heather, described somewhat grandiloquently on an estate-agent's board as "Little Switzerland," but none the less very attractive. Arnhem is a very fine city, rising from the banks of the Rhine to undulating wooded country, and is well laid out with spacious gardens and wide boulevards leading to pleasant modern suburbs. Its chief ancient feature is the market place depicted in my sketch, which was made beneath the single surviving town-gate, with the Groote Kerk in the background. Some three miles outside the town is a remarkable "Open-Air Museum," where old buildings from all parts of Holland have been re-erected in an extensive forest. This collection compares in interest and importance with the similar museum at Aarhus in Denmark (described in my article, "Impressions of Denmark," in *The Builder* New Year Number for 1938). We have nothing like it in this country. The exhibits include old cottages and farmhouses of all types and periods, several windmills, large and small, numerous other buildings, and a very large indoor museum of furniture, implements, vehicles and costumes.

From Arnhem the road north to Apeldoorn traverses fine heathland, rising in parts to the dizzy altitude of 350 ft. above the sea. This is the National Park known as the "Hooge Veluwe," with an area of 15,000 acres, and the Dutch are pardonably proud of it. Apeldoorn is a cheerful little town containing some excellent modern churches, but chiefly noted for the country palace of Het Loo, a baroque building inhabited by the Queen during the summer months, which lies on its northern side. From here to Zwolle one again skirts the Veluwe.

Zwolle is another ancient but busy town surrounded by a broad moat. Its ramparts and bastions have been replaced by beautiful lawns and gardens, but the wonderful Sassenpoort (1408) survives, as my sketch shows, from its fortifications. There are also churches of some interest, a fine Renaissance house in the Sassenstraat, and a splendid new market. The contrast between this hive of industry and the adjoining town of Kampen is palpable, for Kampen approaches one's idea of a "Dead City," as some of these Dutch towns are often called. It is an artist's paradise, full of historical interest, a perfect museum of Gothic churches and gate-towers in a seventeenth-century setting. From Kampen to Meppel I made a detour through the picturesque villages of Hasselt, Zwartsluis and Vollenhove in the hope of seeing something of the great work of reclaiming the Zuyder Zee. In point of fact, there is very little to be seen at present, and Meppel itself, though pleasantly laid out with the usual gardens and deer park, has nothing of obvious architectural interest except a smart new Youth Hostel. The road thence to Leeuwarden, a distance of 43 miles, presents no striking features, and the intervening villages are negligible.

Leeuwarden, on the other hand, impresses one immediately as the capital of Friesland. A large and thriving town with some huge new factories, it nevertheless retains something of its old-world aspect. Its former ramparts have been partially levelled, and fine gardens now take their place inside the moat; but the curious stumpy old church-tower, known as the Oldehove, the Renaissance weigh-house, the graceful façade of the Kanselarij (1566-71, steps 1621), a few bold baroque doorways, and the imposing eighteenth-century town hall are all worthy of notice. The Frisian Museum contains a fine collection of furniture of all periods. Modern buildings worth attention include the municipal baths, cattle market, and technical school. The last-named (1936) accommodates 200 full-time students of building and engineering. Externally and internally it is a most pleasing design, where colour has been used to good effect. One of its features is a splendid museum or laboratory of building materials.

From Friesland one may cross the mouth of the Zuyder Zee on a new embankment, perfectly straight and 19 miles long, or on the steamer from Stavoren to Enkhuizen. I chose the latter alternative, partly in order to visit Enkhuizen and Hoorn, two more of the so-called "Dead Cities of the Zuyder Zee." Enkhuizen is another town which may be described as an artist's paradise. Its picturesqueness is due to a combination of quaint architecture, canals and shipping. The chief buildings are the Zuider Kerk, with a magnificent tower and bells; the Drommedaris gate-tower (1540) by the harbour with a rival carillon; the imposing Palladian town-hall; and the charming Koepoort (=Cow-gate). Built in 1649, the Koepoort is placed obliquely to the line of the Westerstraat, at the end of which it stands, as shown in my sketch, and originally formed part of the fortifications. The road to Hoorn runs for some miles along the great embankment which encloses the Zuyder Zee. Hoorn is not so aggressively dead as some guide-books would have us think, but is certainly picturesque beyond belief, with its fantastic old gate-towers, its town hall,

its weigh-house and numerous decorative domestic façades.

Alkmaar is known to many tourists, who invariably visit it from Amsterdam to see the weekly cheese market. This famous function takes place on the quayside in front of and alongside the extraordinary weigh-house illustrated in my sketch. Originally a church, this building was first used as a meat market in 1578. The florid façade was added in 1582 and the flamboyant steeple in 1599. Alkmaar contains a beautiful Gothic town hall, a dainty little Custom house and a noble late Gothic church, now all cluttered up with flying shores. The structure is unsafe, and drastic restoration has been begun, but now abandoned owing to lack of funds. The interior is interesting and has several remarkable seventeenth-century deacons' pews or pulpits. Alkmaar possesses beautiful parks and many modern buildings, of which most are designed with some regard to Dutch tradition, as is only fitting in such historical surroundings.

From Alkmaar to the Hook of Holland, a distance of some 60 miles, one can avoid Haarlem and Leiden by following a direct road which is picturesque in many places. But I left it twice, first to see the wonderful new lock at Ijmuiden, more than a quarter of a mile long and 60 yards wide, where the largest ships can pass from the open sea through the North Sea Canal to Amsterdam; and next to see the celebrated seaside town Scheveningen, commonplace and cosmopolitan beyond words. This, I was told, is the favourite resort of English people who visit Holland.

Rubens's House, Antwerp : Plans for Restoration.

THE city of Antwerp has prepared plans for restoring the house in which Peter Paul Rubens lived to the state in which it existed during the master's lifetime. This house, in a turning off the Place de Meir, was built by Rubens himself in 1611. He was then aged 34. For a long time the Rubens house has consisted only of a garden portico and a summer house, privately owned, and it was taken over by the city of Antwerp only last May. It was in Antwerp that Rubens developed what amounted almost to a business, his workshop being filled with pupils and assistants who carried out, and often prepared, the designs.

CIVIC PLANNING

By JAMES BURFORD, F.R.I.B.A., A.M.T.P.I.

I.—PROBLEMS OF CAR PARKING.

A PECULIARLY modern problem which faces the town planner and civic designer of the present day is that of the parking of cars. We seem yet to be a long way from fairly meeting it. It is not an easy problem. With the best will and the best technique, we may be hampered, and generally we are constricted by the question of cost. There is no doubt of it, these motorists are expensive people to accommodate, but the problem exists, and every day it calls more loudly for some satisfactory settlement.

In a newly developed district, satellite town, a suburb or a residential area, the will to do and the means to do it, along, of course, with necessary sense and skill, will meet the case. But, unfortunately for sorely-tried planners, and not the less for sorely-tried motorists, the most urgent problems of car-parking are not those of "fresh fields and pastures new," but the graver and far more difficult problems set by the established cities and towns, that is, in technical jargon, by the "built-up areas." And how solidly these areas seem to be built up when it comes to packing another car into them!

One sometimes wonders whether the case can ever be fully answered. There must be a limit somewhere to the amount that can be put on one plot of ground. And there is a limit, too, to the amount of traffic that can be run over the roads. Clearly, there is a strong case for decentralisation. But assuming that is done, some degree of centralisation remains, and decentralisation, it must be remembered, implies, generally speaking, the creation of new centres. The problem there seems to be to make the centre and what lies between it and the periphery agree. There must be, if we are to have planning and not chaos, a reciprocity between the two. That is where the big-scale planner plays his part. The traffic expert—as distinct from the planning expert—does his best. His best is often good, and there is seldom question of its ingenuity. But ingenuity is not creation. Traffic regulation is, in the last analysis, a palliative and not a cure.

A Quick Solution Required.

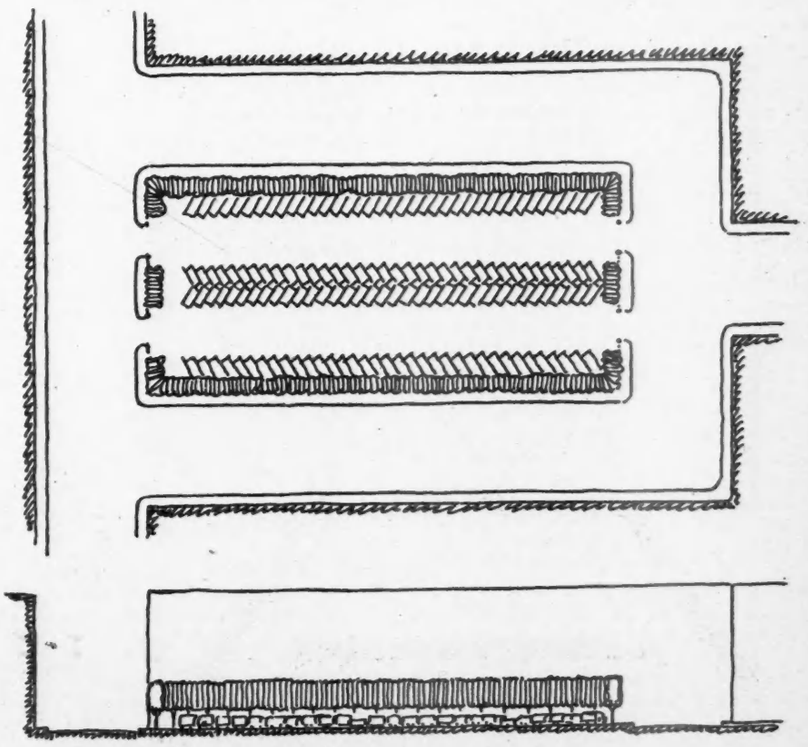
The problem of car parking in areas already sufficiently congested demands imperatively a quick solution. We cannot await "the healing hand of Time," the less so as Time has given us no hope of healing touch. In plain words, things go from bad to worse.

What, then, are the possibilities of dealing, with as much effect as may be, with this urgent and essentially modern problem? The simple question is, where can we park our cars in central areas of towns and cities which were built before this difficulty confronted us?

In answering this question we shall probably trespass on other interests and generally raise a hornets' nest about our ears. But it must be a hard case if something cannot be got from a frank discussion of it.

Car parking is not the only problem which puzzles and perturbs the planner, so let others have their say. In point of fact, I have it in mind to say it for them. But let us take one thing at a time and begin with the problem of parking cars within the limits of established towns and cities.

In the first place, what are the kinds of parking for which provision must be made? Generally speaking, they can be



A suggested system of car parking within the central area of a city square. This arrangement does not exclude additional parking in the surrounding roadways as circumstances may require.

put into three categories. Firstly, short-period parking, such as cars stopping outside shops, or commercial vehicles taking up goods or putting them down. Secondly, long-period parking, when owners are visiting clubs, paying lengthy calls, lunching or dining, attending theatres, concerts and other entertainments or amusements. The car is standing from one hour to perhaps four or five hours. Thirdly, all-day parking, almost exclusively for those who travel to and from their place of business by private car.

It will be seen from this brief analysis that the parking problem is concerned principally with the private car. The chief exception is that of commercial vehicles putting down or taking up goods. Vehicles kept to make money cannot otherwise afford to park.

Penurious town planners and others who cannot afford a private car may be tempted to ask what right the private car owner has to demand that the public provide parking spaces for him. The owner may not improperly reply that he is, himself, a member of the public and pays a pretty tax on what he has. I note, in passing, the question and the answer, but this is not the place to embark on ethical discussion. I am concerned here only with the technical problem of providing car parks.

What, then, are the possibilities of providing parking spaces to meet the three categories set out above? To omit nothing relevant I may first state that the three methods of parking generally in use, described in relation to a kerb alignment, are: (1) parallel parking; (2) diagonal parking; (3) vertical parking.

Number (1) occupies the greatest length and the least width, number (3) the least length and the greatest width. Number (1) presents great difficulty in withdrawing cars and is used only when it is enforced by the narrowness of a street.

Parking in Built-up Areas.

The opportunities for car-parking, in the "built-up areas" we are considering, may be briefly stated and afterwards examined.

(1) Main-road parking—(a) at sides; (b) at centre.

(2) Side-road parking.

(3) Parking round squares and other open spaces.

(4) Parking in squares and other open spaces.

(5) The multiple-storey garage building.

(1) (a) Few of the main roads in our established cities and towns are sufficiently wide to permit side parking. Setting down and taking up are generally all that can be permitted. An obvious objection to side parking in main roads flanked by shops, restaurants, theatres and so on, is the complete obstruction, by a small and limited number of cars, to other and later arrivals. Side parking in a main street may be regarded as an impracticability.

(b) Main road, centre-parking. Main roads or streets containing centre islands frequently have a centre strip virtually useless to through traffic. This strip is commonly used for taxi ranks. Taxis seldom take up and, we may say, never put down, in this position. Its use as a parking space by the owner-driven car, by reason of its isolation between two streams of traffic, presents difficulties and dangers, but its possibilities for parking chauffeur-driven cars, particularly on occasions of exceptional traffic pressure, such as, for example, an opera night, have not been fully exploited.

(2) Side-road parking.—The possibilities of side-road parking have been largely explored by traffic controllers. The object in view is to remove cars which have discharged passengers as rapidly as possible from the main streets, and at the same time to park them in an accessible position. This must be done without injury to the primary purpose of the side roads, *i.e.*, service to the buildings along them. Side roads adjacent to main roads, under the conditions we are considering, are generally occupied by the premises of businesses operating only during the day. They may, therefore, be used without injury to their primary purpose by evening traffic attending buildings in the main streets.

(3) Parking round squares and other open spaces is a method commonly employed. The inner side of the road may generally be used as a car park throughout the day. The outer side may be used subject to conditions similar to those controlling the use of side streets expressed in (2).

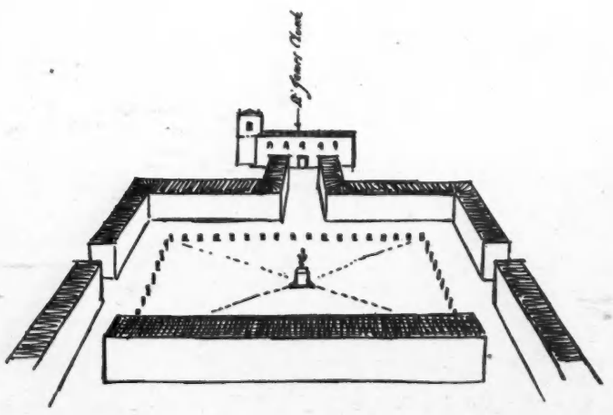
(4) Parking in squares and other open spaces. This is an opportunity which brings in a revolutionary note. Opposition will at once be rampant. The possibility has scarcely received a trial, but it is worthy of examination. Briefly, the shocking suggestion is to pave the whole of the central area and throw it open as a parking space for cars. This is not a suggestion to be contemptuously dismissed. I know that many of our city squares contain delightful public gardens. I would be the last to countenance their desecration. I would defend their urban greenery to the last Air Raid Precautions ditch. But there are squares, that I could name, where these considerations have no place. There are squares where cars, not cats, should be the denizens. This metamorphosis, this change from uselessness to usefulness, need not offend a sense of the amenities. So far from that it may be the chance of much improvement. Trees are not incompatible with parking. Readers will recall in this respect the broad paved areas and the trim rows of trees in the squares of many a French town. It is a truly fitting treatment of an urban open space. Under some circumstances, such an open area need not be a car-park all the time, but its usefulness, at the incidence of the highest traffic pressure, will not be denied. Taking the suggestion as a whole, it is a more deliberate and a better method of providing space for parking than the encumbrance of streets by standing cars.

The Multi-storey Garage.

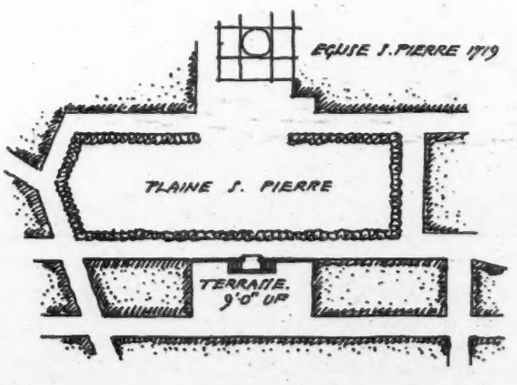
(5) The multi-storey garage building has the advantage of accommodating large numbers of cars. It has the disadvantage of bringing together and of distributing those large numbers in streets most probably not designed to hold them. More probably is this the case, as sites suitable for such buildings are difficult to come by in close proximity to main streets. Their siting should be carefully controlled by Town Planning Regulations. Their undoubted usefulness is perhaps most apparent in respect of parking for relatively long periods. Suggestions have been made for constructing multi-storey garages beneath London squares. To such the same considerations would apply.

NOTE.—Some suggestions by the present writer for meeting the Order of the Minister of Health bringing into operation in London from January 1, 1937, Section 20 (3) of the Restriction of Ribbon Development Act, 1935 (relating to the setting down and taking up of passengers or goods at new places of public resort or other buildings mentioned in Section 17 of the Act), were published in *The Builder*, November 13, 1936, and may usefully be read in conjunction with the above article.

(To be continued.)



A diagrammatic view of St. James's Square, Piccadilly, as originally designed, showing the central area usable by traffic. Most London squares were originally treated in this way. The present gardens in London squares are generally the result of the enthusiasm for landscape gardening which characterised the later years of the eighteenth and opening years of the nineteenth centuries.



A typical Continental example of a "place" with unturfed central area surrounded by formal tree planting. The Plaine S. Pierre, at Ghent, was laid out in the second half of the eighteenth century in relation to the earlier church of S. Pierre. The space for "setting down and taking up" in front of the church should be noted. The surrounding façades are early 19th century.

A STILTON CHEESE MEMORIAL

By F. R. JELLEY.

In this little old island of ours it is customary, on the slightest provocation, to erect memorials in public places commemorating the activities and inactivities of nearly everybody who has ever been anybody.

Indeed, it may appear to the conscientious student of our native peculiarities that, in the general enthusiasm for statuary at any price, numerous monuments have been raised to perpetuate the memory of nonentities whom most sensible people might prefer to forget.

The immortal G. K. Chesterton was once moved to protest against the decoration of Parliament-square, in the very heart of the Metropolis, with sooty effigies of politicians carrying what appeared to be light bath towels over their arms. And it is a fact worthy of remark that the importance of any site selected for the erection of any memorial is generally in inverse ratio to the prominence of the individual it purports to commemorate.

Representations of people who, during their lifetime, were regarded as pompous and intolerable bores are usually placed in positions dominating main arterial roads so that citizens immured in solid traffic blocks, like fossils in a chunk of Portland stone, may sit back and ruminate on the dreadful truth that even after death the very memorials to these types shall continue to prove an annoyance and obstruction to the normal activities of the community.

In short, it is fairly safe to assert that anybody who would seek the best memorials to the great men and women of our race must forsake the main roads and explore the by-ways.

This traditional English procedure controlling the erection of memorials should be reversed. For instance, I myself would like to see in Parliament-square a statue in honour of good Mrs. Paulet, of Wymondham. And, if we are not to be allowed to perpetuate outside the Houses of Parliament the immortal memory of the gracious lady who first produced Stilton cheese, it might at least be permissible to erect, in that vicinity, memorials to Colonel Buncombe and the Reverend Thomas Bowdler, who bequeathed to us two of the most useful words in parliamentary language.

Some time ago, the formation of a Stilton Memorial Committee was announced, but, so far as I am aware, the result of its deliberations has not yet been published. It is possible, of course, that there may have been some good-natured controversy about the site of the memorial.

For example, men of Leicester (among whom I am proud to count myself) might justly claim that a monument to a former resident of Wymondham, who achieved immortality by discovering a new and luscious cheese, should properly be erected in that delightful little Leicestershire village.

On the other hand, natives of the adjacent county of Huntingdon could retort with characteristic logic and brevity of speech that a memorial to the originator of Stilton cheese should obviously be located at Stilton.

Any consequential complication that might arise owing to the fact that men of Leicester claim to be bigger eaters of cheese and, therefore, better judges than men of Huntingdon, could easily be settled by erecting memorials in both counties.

I am no authority on cheese and accept without question the ruling of Mr. Hilaire Belloc, who has said that if antiquity be the only test of nobility, then cheese is a very noble thing.

It seems to me, therefore, that an open competition among architects for designs for a monument to be erected in commemoration of the discovery of Stilton cheese would be an entertaining affair. The value of the premiums offered to successful competitors might be rather low, but nobody would ever dare to ignore any stipulation that the subject itself should be a trifle on the high side.

Unfortunately, there is a possibility that such a project would be regarded with grave suspicion by the Competitions Committee of the R.I.B.A., as that august body might experience difficulty in drafting appropriate conditions. It is credible that entries might be restricted to professional practitioners with twenty-five years' personal experience of the subject. The competition might even be banned entirely on the ground that praise of cheese could more appropriately be left in the hands of the Worshipful Company of Grocers or the Wine and Food Society.

All such restrictions would, in my opinion, be deplorable, for they would automatically exclude from participation enormous numbers of the younger generation of architects of the so-called Modernist School, who claim to be able to express in their work Noise and Urge and Old Man River and all sorts of other abstract forms and should, therefore, be quite competent to deal with such a very definite subject as cheese.

I have recently been led, almost forcibly, to contemplate Modernist schemes of decoration alleged to be symbolical of Rhythm, which I had, in sheer ignorance, erroneously assumed to have been executed by inebriated caterers throwing bits of broken crockery at wall surfaces rendered and set with batter pudding.

I should therefore like to see a design in the so-called Modernist manner symbolical of something a little less ethical or difficult than Rhythm, and Cheese seems to be an ideal subject.

Prospective competitors could be invited to travel abroad, at their own expense, and see what other countries can produce when confronted with æsthetic problems of a similar character.

In France, for instance, there is already in existence a memorial to the redoubtable Madame Camembert.

Away down in Coffee County, Alabama, there is also a public monument in honour of the boll-weevil. This industrious little insect is, I am informed, a close relative of the cheese mite and, some years ago, it seems that an adventurous young boll-weevil alighted on the town of Enterprise and was inspired by the name of the place to raise an enormous family of hungry little boll-weevils who promptly proceeded to eat up the whole of the cotton crop in the neighbourhood. The townsmen of Enterprise were annoyed but not disheartened. Unanimously they decided to abandon the cultivation of cotton and by concentrating on the art of salesmanship and the export of other home-town products, comprising, it is said, peanuts and popcorn and crooners, managed to inaugurate a remarkable era of prosperity.

I have not, myself, visited Alabama, but I am assured nightly by the British Broadcasting Corporation, our latter-day arbiters of taste and culture, that it is the home of Ragtime Cowboy Joe, and the place where everybody is longing to go. The boll-weevil monument down at Enterprise should, therefore, prove worthy of a visit of inspection by all serious students of modern art.

It must not be overlooked, however, that the subject of the projected competition is intended to be a memorial in honour of Mrs. Paulet, of Wymondham, who lived at Withcote, which is in Leicestershire, and contracted to supply with cheese an innkeeper at Stilton, which is in Huntingdon.

After all, may it not be that the true and appropriate solution of such a delightful proposal would be the erection, in the traditional English style, of a really efficient roadside inn for the use and entertainment of men of good will who have no urgent or particular business to transact, but are ready and willing to sit and eat and drink and talk together, as is the English fashion?

It is to be hoped that the Stilton Memorial Committee has not yet concluded its deliberations, for, although I fear my suggestion for the solution of the problem is not sensational, it seems simple and may therefore have been completely overlooked.

In that eventuality, it may be considered unnecessary to hold a competition at all, and the world will never know how the exponents of our so-called Modernist Movement would react when confronted with such a virile and fruity motive as Stilton Cheese.

SAVING COUNTRY HOUSES

National Trust's Proposed Bill.

At an extraordinary general meeting of members of the National Trust, held on Tuesday at the Royal Institute of British Architects, it was unanimously agreed to support a Bill to be introduced into Parliament in the Session of 1938-39 to make further provision for the transfer of lands to the National Trust for places of historic interest or natural beauty.

The Bill provides that a tenant for life may vest in the National Trust, either for a consideration or gratuitously: (*a*) The principal mansion house on the settled land and the pleasure grounds, park and lands, if any, usually occupied therewith; (*b*) any lands occupied or enjoyed for the purposes of agriculture, sport or afforestation, the acquisition of which, in the opinion of the Council of the Trust, is necessary or desirable for preserving the amenities of the principal mansion house; and (*c*) any lands, buildings, and any rights and easements or interests therein which, in the opinion of the Council of the Trust, it may be desirable to hold for the purposes of endowing the principal mansion house, pleasure grounds, etc., and the grounds for amenity purposes.

These powers are to be exercised only with the consent of the trustees of the settlement, or under an order of the Court, and after H.M. Commissioners of Works have certified that the principal mansion house is a building of national, architectural, historic or artistic interest. In return for the transfer of the property to the National Trust, this body is to give a lease to the tenant for life, or statutory owner for a term not exceeding 150 years at a nominal rent.

GESSO RELIEF CRAFTSMANSHIP

By REGINALD HALLWARD.

A YOUNGER sister to plaster work, gesso does not compete with the vastly wider use of the former for internal decoration, whether fibrous plaster, stucco, "compo," or *carton-pierre*. It has, none the less, particular adaptability in its own directions. The history of gesso is a long one, dating back for a thousand years, to gesso work in the tomb of Tutankamen, and in the Far East. It is to be seen in Byzantine decorations, in mediæval times, in the ecclesiastical art of the Italian, Spanish and Dutch schools; used as a ground for gilding over carved woodwork, or as the medium for built-up relief. The beautiful screen in Southwold Church is of "compo" and gesso, and there is in the Victoria and Albert Museum a grand piano by Broadwood, decorated in gesso relief by the late Kate Faulkner, but only to an amount such as is seen in the raised capitals of an old missal, showing, without going further, the varieties of its application.

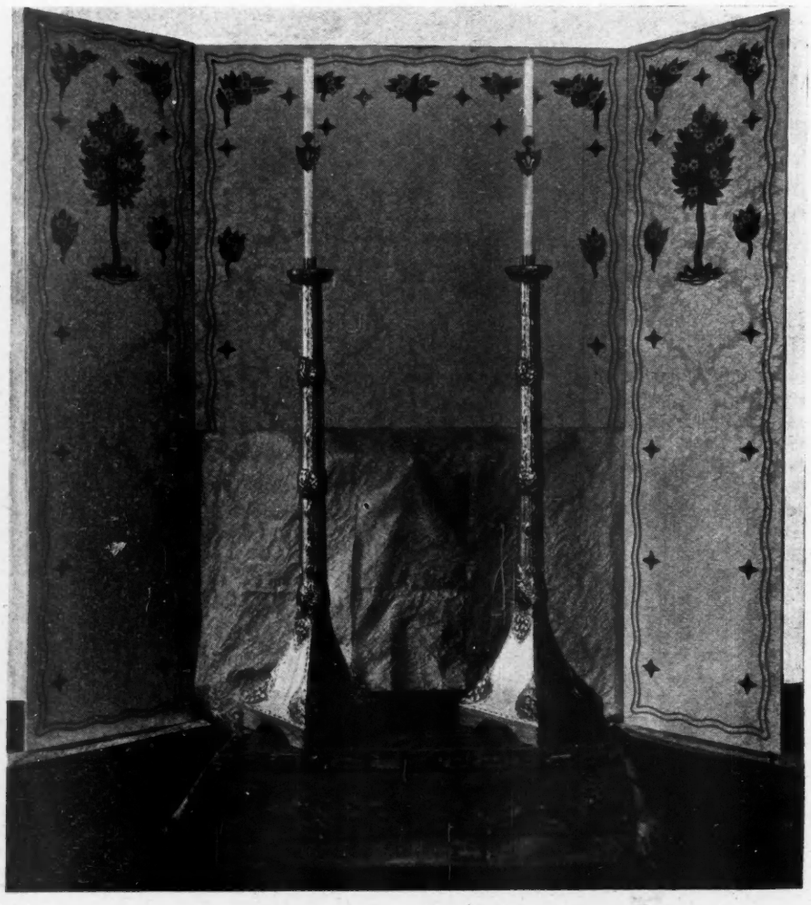
Gesso is one of those crafts which, like stained glass, is not likely to be submerged by the machine. Hand-wrought throughout, it is full of surface charm and freedom of handling, so different from mechanical finish. Its permanence is proved from its long periods of survival. But we must think of technique. Disregard of the consecutive methods, such as, for instance, the time allowed for drying between each coat, will imperil the permanence of gesso. But proper methods being employed, it is a decorative medium full of beauty and permanence of character.

In giving a brief account of the method I employ, I do not preclude other methods than mine from being equally serviceable. What I know I know for myself, and distrust any claim for infallibility. At the same time there should be no secrets in honest craftsmanship, and the ill-bred craftsman who has secrets is a defaulter to the honourable traditions of art. What a difference it would make did not words so often affect the more certain judgments to be formed out of actual practice. There are movements in the arts to-day requiring a whole literature to explain what looking at the work would almost at once explain!

Coming to the materials, gesso is made by the admixture of gelatine glue or parchment size with slaked plaster of paris, or gilder's whiting. I understand that sometimes mixed in with these there is tallow, linseed oil or resin. I have, however, always found the simple ingredients I have named quite sufficient without them. When these are mixed in right proportion the vessel containing the gesso is either stood in hot water or over a small stove at very low heat. When cold it naturally sets hard and must be dissolved again for use. Nor is it satisfactory for working after repeated warming, and fresh gesso should be prepared. Before re-warming it for use, as a skin of glue rises to the top when cold, hot water should first be poured over the surface to remove it. When building-up relief is required, alto-relevo or other, cotton wool dipped in the gesso, or a thick felt-paper, soaked and then shredded, is mixed in with the gesso, forming a sort of putty, and applied by hand. When dry it can be further carried on by carving with tools, alternatively with the hand work, until brought up to the required relief, but always finishing with the brush to preserve the gesso character, in which lies its particular charm. As with painting, it is not merely the materials you use, but how you use them that matters; on this chiefly depends the beauty and permanence of gesso.

In regard to grounds for working on, plywood and several of the composition boards are suitable. For larger work, in higher relief, asbestos sheeting forms an excellent base, and I used it for the reredos in St. Margaret's Church, Leicester (illustrated). In the case of a reredos panel as large as that mentioned, the asbestos was attached to a stout wood stretcher, braced with T irons behind, the irons being removed when the panel was fixed in its permanent frame. Where ordinary wood panels are used, they should be covered with thin linen to avoid any chance of splitting. In all cases the gesso ground should be put on both sides, back and front, to prevent warping from the pull of the material. Having achieved a secure base for the work with a good key, for which the surface should be roughed, we can build up freely. The modelling being completed, the surface is prepared for gilding with three coats of white polish, followed by one of Japanner's gold size, and the surface well rubbed down with french chalk before and after the coat of Japanner's. I find the white polish a better priming than parchment size. But oil gold size does not key well on the surface, so the coat of Japanner's gold, which works well with either medium, is put over to unite the two. I should always advocate under gilding with aluminium. Modern gold leaf being thinner than when the Temple of Solomon was overlaid with fine gold, the aluminium underneath gives a solider, richer quality to the gilding, and is better for after colouring. For after glazing with colour, the more transparent oil colours thinned with turps and the addition of a little Japanner's gold should be used. This is put on thinly, and dabbed with a soft material to spread the colour evenly and to retain the combined effect of the metal and colour seen together.

No doubt, as Goethe said, it is "the least part of art that can be learned," and to give particulars for the use of gesso is rather like a conjurer who explains to us how he does the trick, but not how we can do it! At the same time there are no exceptional difficulties in handling the materials used. There are many other directions for its use, such



A PAIR OF SANCTUARY CANDLESTICKS.

The Sanctuary candlesticks, illustrated, for All Saints Church, Woodford Green, which are 5 ft. in height, are modelled in gesso on an oak foundation, gilded and glazed with colour. The raised ornament is gold and the plain spaces blue, with accents of silver and black. The panels of embroidery which are for St. George's Church, Edgbaston, are inset in an oak reredos, worked in applique on a deep oyster brocade in prevailing colours of rose, gold and green. The work was designed and executed by Mr. Reginald Hallward, with the exception of the embroidery panels, which are by Miss Patience Hallward.

REREDOS PANEL IN ST. MARGARET'S CHURCH, LEICESTER.

A GESSO RELIEF, GILDED AND COLOURED, DESIGNED AND EXECUTED BY MR. REGINALD HALLWARD.

as the Sanctuary Candles in All Saints' Church, Woodford Green (illustrated). These are modelled on a solid oak core, on which the required gesso treatment is imposed, gilded and coloured.

But let us know where we are. Craftsmanship, the hand-wrought work of the artist, is in danger to-day, and survives with difficulty when we cease to distinguish between it and the machine. In the case of architecture, when all art was craftsmanship—architecture or any other—the sculptures or other decorations were but varieties of the same feeling and outlook, not something added, foreign to the nature or the fabric—often nowadays huge amorphous concrete mass, which is replacing architecture. *Festina lente* has little application to-day save in the creative arts, which are timeless in their nature. Yet the problem is not without solution, and we must greet any recognition of the claims of creative art wherever these appear.

WIT AND WISDOM OF 1938

If 1938 cannot be regarded as a vintage year in so far as architectural wit and wisdom are concerned, its output is very stimulating. International disputes may sharpen wit, but seldom provide humour, and perhaps it is this latter quality which is a little lacking in the recorded sayings of the year. We shall see!

* * *

In January, Mr. Howard Robertson described Germany as producing "*a new cold classic, with public buildings like antique temples, which have been gone over by a Schick electric shaver.*" Mr. Goodhart-Rendel, in one of the best presidential addresses to students we remember, issued the warning that "*memories of the kind of Victorian architect who was far too artistic for ventilation and drains have led some of his successors into a propaganda that holds out ventilation and drains and social conveniences generally as the architect's chief gifts to his fellow men,*" and reminded them that "*it is emotion and prejudice that cause an art to bounce unprogressively from fashion to fashion; it is thought that steadies and furthers its course.*"

* * *

Later on, at the R.I.B.A. banquet, the President defined "education of the public" as "*a nasty phrase used by those whose educational aim is that of inducing other people to buy what they themselves want to sell.*" This was in February, and almost an isolated effort. In March, Mr. W. A. Eden, in the course of a brilliant paper, at Leeds, on "Building in the Countryside," said: "*I have often noticed, in old towns, that the only building that looks out of place is the 20th century bank or public-house that is trying desperately hard to preserve the atmosphere of the place. . . . I do not deny that such a thing as atmosphere exists, but would suggest it is not an architectural quality.*" Speaking on the vexed subject of speculative housing, Professor Richardson told architects in London that "*We have sold our birthright for a mess of cottages,*" and architects in Liverpool that "*a fine building is of relatively greater importance than a host of humans.*" With which dictum who will be found not to agree?

April saw Sir Edwin Lutyens in high fettle at the Press meeting to discuss plans for the National Theatre. "*I feel like a hen must about an egg,*" he said in reply to a question as to the appearance of the theatre. "*I know the shape of the egg, but am in the dark about what is inside.*" Again, in response to an inquiry as to whether he had ever designed a theatre before, came the frankly ribald: "*No! Neither before nor behind.*" At the end of the month, Mr. Charles Holden, speaking at the R.I.B.A. on London University, said: "*I find that a change of plan brought about for perfectly good and practical reasons usually leads to most interesting and unforeseen results . . . an introduction to a new and pleasurable adventure.*"

* * *

The month of May was, unusually enough, neither merry, witty nor wise, for no sayings coming under any of these headings can be found recorded.

In June, we noted a protest by Mr. W. A. Daft against the delay caused by the Restriction of Ribbon Development Act, as a result of which he said, "*The client is beginning to doubt his sanity, and the architect has long given up hope of his.*" Later in the month, Mr. Goodhart-Rendel was found in action again, at Bristol, where he told the British Architects' Conference that "*the tight stays of Edwardian stylism have been loosened, and planning has not been denied its full natural development.*" The President entered a plea for allowing filling stations structurally to be an æsthetic link between the old house next door and motor cars that were constantly passing both of them. "*People who thatch petrol pumps,*" he declared, "*ought to put leaded glazing into their windscreens.*"

At the same conference, Mr. J. E. Barton, in the course of a spirited *apologia* of contemporary architecture, stated that: "*No true æsthetic conversion has been achieved when you induce people to forsake their bulbous Victorian curves for crudely angular abortions which pretend to embody a contemporary style.*"

The July market for humour opened dully, if we except an attempt down in Essex to construe a "hoopla" stand as a building! Lord Samuel retrieved the situation with a speech at the A.A. prize-giving, in which he reminded his audience that "*The emphasis on functionalism and honesty is a little inclined to overlook the claims of grace.*"

In August we drew a complete blank, for the architect was, we imagine, resting from his labours, possibly with a long glass in front of him! September also was quiet, though enlivened by reading Paul Starrett's book of reminisences, in which mention is made of one interpretation of the meaning of a contract, given by an illiterate Pole: "*Vat is a contract?*" he asks. "*If you gyp me you gyp me; If you don't, you don't.*" A chance remark overheard by one of the saleswomen at the Building Exhibition—"*So I said to him: 'What do you want at the price . . . St. Paul's?*—also seems worth recording. Looking back on this month—which witnessed the crisis—we can perhaps see some traces of humour, and even gain a little wisdom!

* * *

October was a subdued month, though many must have sighed with relief when Mr. J. B. Priestley, in opening the R.I.B.A. Small House Exhibition, declared, "*I am not for shooting or imprisoning speculative builders.*" But with November and the opening of the R.I.B.A. session, the market for wit and wisdom briskened. The President, in advocating the open competition as a means of obtaining plans, dryly defined the timid layman as "*a person who hopes for little better in his architect than a man of whom he already knows the worst.*" Pursuing the question of competitions, Mr. Goodhart-Rendel declared that, as architectural ideas cannot be fully born without opportunities, "*the Institute ought to be a sort of Queen Charlotte's Hospital for providing what is necessary for their delivery.*"

Perhaps as a result of preoccupation with A.R.P., little else was noted during the month, but in December Professor

W. G. Holford, speaking at the R.I.B.A., stated that: "*Before functionalism is packed off to bed like a naughty child, let us remember that it is not a naughty child, personified for the first time by Le Corbusier, but a hardy veteran who appears in history whenever a great architectural movement has passed its climax. Interest is moving from the stage setting to the drama, and the functionalist scene-shifter helps to move the scenery of the last act off the stage.*"

And so 1938, that year of grace (which some have called the year of disgrace), shuffles off the boards, leaving behind a record of wit and humour which, by and large, is creditable. May 1939 see no falling below the level that has been set!

R.I.B.A. PRIZES AND STUDENTSHIPS

NOMINATION OF ROYAL GOLD MEDALLIST.

At the ordinary general meeting of the Institute on Monday, January 9, it was announced that the Council proposed to submit to H.M. The King the name of Mr. Percy Thomas, O.B.E., Hon. LL.D., P-P.R.I.B.A., as a fit recipient of the Royal Gold Medal for 1939. Mr. A. H. Moberly, M.A., V-P.R.I.B.A., was in the chair at the meeting.

The deed of award in the R.I.B.A. prizes and studentships was opened and announced. A review of the works submitted was given by Mr. S. Rowland Pierce, F.R.I.B.A., from whose remarks we take the following extracts:—

I am one of those who believe that student competitions, with the rewards of prizes or scholarships, are the finest training ground for anyone who is prepared to face the hard work with possible triumph or disappointment as a reward. The graduate or post-graduate contest of this sort is not only an exercise and test for a man's ability, but is something that makes him face up to his position in relationship to his contemporaries. Ultimately, the completion of a set of drawings, carried to a fine state of finish and combining all the best a man may know, is a test not only of knowledge, of skill and craft, but a test of character. To work through to the end of a competition with full realisation that there is no relief—no "letting up" even for the shortest period—is a job for the constant worker, and not the slacker: neither is it a job for the "stunter" or the imitator, or for the man who thinks he can give as much analysis to the characters and works of the jury as he gives to the written programme and its problems. It is a task, as is any work of architecture, for the architect—the "arch-technician"—a man who really loves his work.

The subjects set by the Institute are ideal ones aiming at the finest in planning and in architecture, and, with one exception, do not ask the student to be shackled by that hard taskmaster, economics. When the subjects are handed in, the judgment is in the hands of a jury, varying always from year to year. It is interesting to stress this last point, because throughout the long history of these prizes there is a consistency of judgment that can only indicate a rightness in the system. Apart from the formal adoption of the jury's recommendations by the Board and the Council, the jury's verdicts are absolute ones.

A feature that should, in my judgment, be fully stressed is concerned with presentation—with draughtsmanship and rendering. Draughtsmanship is, for architecture, a means to an end; but there is no doubt that fine and expressive drawing leads to a better end, a finer building, than does careless or unsympathetic portrayal. The buildings that are created on paper in a student competition will (fortunately or unfortunately) not be built: it is all the more essential, therefore, that drawing and presentation receive the fullest consideration. I cannot help feeling that in recent years the art of architectural draughtsmanship has seen a sort of decline. I do not here refer to those doubtful blessings "Academy perspectives," but to the real art of plan expression, to the real art of elevational and sectional rendering, where texture and form and colour (if such is an important factor) enter into the problem as it is left upon paper, and where a subsequent building in three dimensions is not to materialise to save (or further mar) the situation. Drawings for any competition, and particularly those for student competitions, cannot have too great a clarity or completeness, and should be given the fullest study. A brilliant design cannot be wrecked by bad presentation, nor can a bad design hope to be saved by magnificent handling of the pen and pencil; but if a design is worthy, why not accept the fullest aid that the art of architectural draughtsmanship can give?

Mr. H. B. Wallis, of the Board of Education, proposed a vote of thanks to Mr. Pierce, and Mr. G. A. Jellicoe, F.R.I.B.A., Principal of the Architectural Association, seconded.

The results of the various competitions are as follows:—

The Tite Prize: A Certificate and £50 for the Study of Italian Architecture.—Subject: "The Meeting Place of an Academy Within the Grounds of a Palace." The prize was awarded to: "Gratz," Mr. Robert Brodie Thomson (Student, R.I.B.A.), Sheffield 10 (Dept. of Architecture, University of Sheffield). A Cert. of Hon. Mention awarded to: "Rofo," Mr. Charles Roy Fowkes (Student, R.I.B.A.), Hampstead, N.W.3 (Dept. of Architecture, Northern Polytechnic, London).

The Victory Scholarship and £150 for the Advancement of Professional Education.—Subject: "A Hostel for University Students." Awarded to "Sub-Rosa," Mr. Reginald Cave, A.R.I.B.A., Barnet, Herts (Bartlett School of Architecture, University College, London). A Cert. of Hon. Mention awarded to: "Elmjo," Mr. David E. Lang, Student, R.I.B.A., Edinburgh (School of Architecture, Edinburgh Coll. of Art).

The Pugin Studentship: A Silver Medal and £75 for the Study of Mediæval Architecture of Great Britain and Ireland.—Awarded to: Mr. S. J. Clewer (Student, R.I.B.A.), Kinver, Stourbridge, Worcs (Birmingham School of Architecture). A Cert. of Hon. Mention and £20 awarded to: Mr. C. C. Fraser, A.R.I.B.A., Dunfermline, Scotland (School of Architecture, Edin. Coll. of Art).

The Owen Jones Studentship: A Certificate and £100 for the Improvement and Cultivation of Knowledge of the successful application of Colour as a Means of Architectural Expression.—Subject: "A National Publicity Pavilion." Awarded to: "August," Mr. Serge G. Kadleigh, Student, R.I.B.A., London, W.6 (School of Architecture, the A.A., London).

The R.I.B.A. Silver Medal and £50 for an Essay.—Awarded to: "Pike," Miss Kathleen Gibbons, Student, R.I.B.A., Bristol 8 (The Royal West of England Academy School of Architecture, Bristol). "The Architectural Development of the Florentine Villas."

The Banister Fletcher Silver Medal and £26 5s. for the Study of History of Architecture.—Subject: "The Development of the English Parish Church in Plan and Structure." Awarded to: "Tanledon," Mr. Noel B. Dant, Student, R.I.B.A., London, W.1 (School of Architecture, the Polytechnic, Regent-street, London). Certs. of Hon. Mention awarded to: "Cantor," Mr. Robert L. Jenkins, Student, R.I.B.A., Penarth, Nr. Cardiff (the Welsh School of Architecture, the Tech. Coll., Cardiff); and "Salt," Mr. Norman Harrison, Probationer, R.I.B.A., Baildon, nr. Shipley, Yorks (Leeds School of Architecture).

The Alfred Bossom Travelling Studentship: A Gold Medal and £250 for the Study of Commercial Architecture in America.—Subject: "A Country Club." Awarded to: "Dopey," Mr. Nelson Foley, Nottingham (School of Architecture, the Polytechnic, Regent-street, London). A Silver Medal for the competitor placed second in the competition awarded to: "Jason," Mr. Stanley Jordan, London (School of Architecture, the Polytechnic, Regent-street, London).

The Godwin and Wimperis Bursary: A Silver Medal and £200 for the Study of Works of Modern Architecture Abroad.—Awarded to Mr. Herbert Thearle, Dip. Arch., Liverpool, F.R.I.B.A., Liverpool 1 (Liverpool School of Architecture, the University of Liverpool).

The Henry Saxon Snell Prize: £100. (Offered jointly by the R.I.B.A., and the Architectural Association for the Study of Improved Design and Construction of Hospitals, Convalescent Homes and Asylums for the Aged and Infirm Poor.)—Awarded to: Mr. D. R. Harper, B.Arch., Liverpool, A.R.I.B.A., Welwyn Garden City, Herts (Liverpool School of Architecture, the University of Liverpool).

The Hunt Bursary: £60 for the Encouragement of the Study of Housing and Town Planning.—Awarded to: Mr. A. G. Ling, B.A., Hon. (Arch.) Lond., A.R.I.B.A., A.M.T.P.I., London, N.W.3 (Bartlett School of Architecture, University of London).

The Arthur Cates Prize: £75. (In the current year the prize was offered for the Promotion of Architecture in Relation to the Application of Geometry to Vaulting, Stability of Edifice and Design.)—Awarded to Mr. W. T. C. Walker, A.R.I.B.A., British School at Rome, Italy (School of Architecture, Edinburgh College of Art).

The Athens Bursary: £100 for Study at the British School at Athens.—Awarded to: Dr. Ronald Bradbury, B.A. (Arch.), Manchester, M.Sc., D.Phil., A.R.I.B.A., South Shields (School of Architecture, the University of Manchester).

The Henry L. Florence Bursary: A Certificate and £350 for the Study of Greek, Hellenistic and Byzantine Architecture of the Mediterranean Basin.—Awarded to: Mr. Arnold Silcock, F.R.I.B.A., London, N.W.8.

The Ashpitel Prize, 1938. Prize of books, value £20 (awarded to the candidate most highly distinguishing himself among the candidates in the Final Examinations of the year).—Awarded to: Mr. George Gaze Pace (Student, R.I.B.A.), Croydon, Surrey (School of Architecture, the Polytechnic, Regent-street, London).

The R.I.B.A. Silver Medal and £5 in Books for Students of Schools of Architecture Recognised for Exemption from the Final Examination.—Awarded to: Mr. Frank Booth (Student, R.I.B.A.), Cleckheaton, Yorks (Leeds School of Architecture). A Cert. of Hon. Mention awarded to: Mr. Dewi P. Thomas (Student, R.I.B.A.), Liverpool, 8 (Liverpool School of Architecture, University of Liverpool).

The R.I.B.A. Bronze Medal and £5 in Books for Students of Schools of Architecture Recognised for Exemption from the Intermediate Examination.—Awarded to: Mr. Geoffrey Robson (Probationer, R.I.B.A.), Dudley, Worcs (School of Architecture, A.A., London).

The Archibald Dawnay Scholarships: Three Scholarships of the Value of £50 each for the Advanced Study of Construction.—Scholarships awarded to: 1. Mr. John R. M. Poole (Student, R.I.B.A.), London (School of Architecture, the Polytechnic, Regent-street, London). 2. Mr. Thomas E. Fennell (Student, R.I.B.A.), Co. Durham (School of Architecture, King's College, Newcastle-on-Tyne). 3. Mr. John B. Hall (Student, R.I.B.A.), Galashiels (School of Architecture, Edinburgh Coll. of Art).

The R.I.B.A. Henry Jarvis Studentship at the School of Architecture, the Architectural Association: £50.—Awarded to: Mr. Richard D. Hammett (Student, R.I.B.A.), Putney.

The R.I.B.A. Howard Colls Travelling Studentship at the Architectural Association: £15 15s.—Awarded to: Miss Margaret Reid Morgan (Probationer, R.I.B.A.), Reading.

The R.I.B.A. Donaldson Medal at the Bartlett School of Architecture, University of London. Awarded to: Mr. Lawrence F. Baker (Student, R.I.B.A.), London, S.W.17.

The R.I.B.A. Prize for Art Schools and Technical Institutions with Facilities for the Instruction of Intending Architects: £5 in Books.—Awarded to: Mr. Anthony Petty (Student, R.I.B.A.), Southampton (Department of Architecture, the Municipal School of Art, Portsmouth).

Details of the R.I.B.A. Prizes for Public and Secondary Schools will be given next week.

THE NEW BANK OF ENGLAND, THREADNEEDLE STREET, E.C.

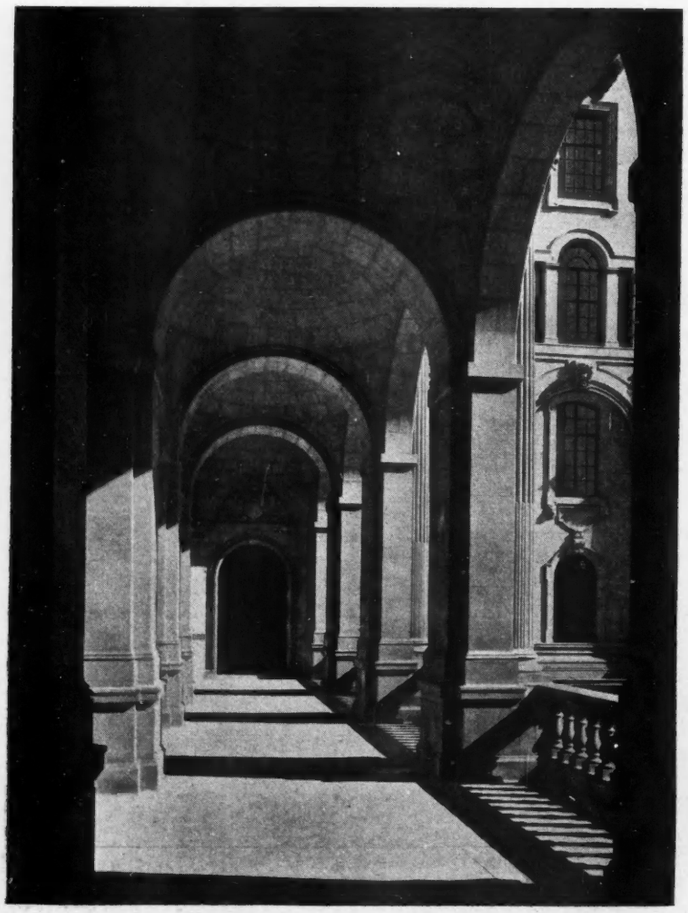
GENERAL VIEW FROM THE MANSION HOUSE.

The new Bank of England, which is now nearing completion, has been built to the design of Sir Herbert Baker, R.A., and Mr. A. T. Scott, F.R.I.B.A., with Mr. F. W. Troup, F.R.I.B.A., as Supervising Architect. The consulting engineers are Dr. Oscar Faber (for the structural steelwork, reinforced concrete and mechanical services), and Mr. W. C. Easdale (for the sanitary services). In the reconstruction of the Bank the old outer walls by Sir John Soane have been retained and various halls and rooms from the old Bank have been adapted for the new building. The general contractors are Messrs. Holloway Brothers (London), Ltd. The Bank, of course, is an enormous building and contains a great number of impressive interior apartments ; the views which we show, at this intermediate stage, are intended only to give a general indication.

SIR HERBERT BAKER, R.A., AND MR. A. T. SCOTT, F.R.I.B.A., ARCHITECTS.

MR. F. W. TROUP, F.R.I.B.A., SUPERVISING ARCHITECT.

VIEW LOOKING EAST, FROM TIVOLI CORNER.



Above: PART OF MAIN STAIRWAY FROM THREADNEEDLE STREET.

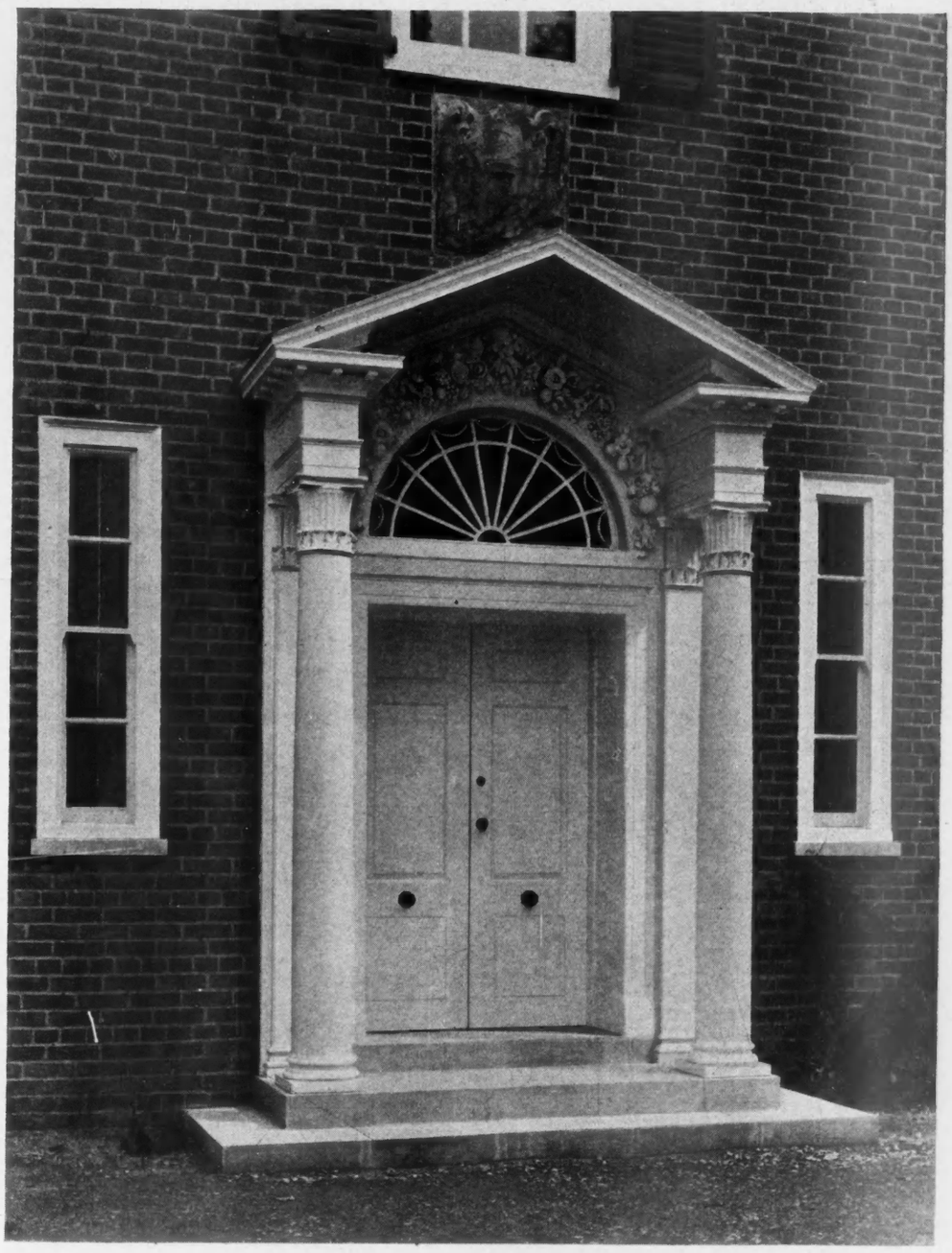
Left: GARDEN COURT, EAST LOGGIA, LOOKING SOUTH.

THE NEW BANK OF ENGLAND, THREADNEEDLE STREET, E.C.

SIR HERBERT BAKER, R.A., AND MR. A. T. SCOTT, F.R.I.B.A., ARCHITECTS.

MR. F. W. TROUP, F.R.I.B.A., SUPERVISING ARCHITECT.

"PEASMARSH PLACE," SUSSEX: REMODELLING AND ADDITIONS.

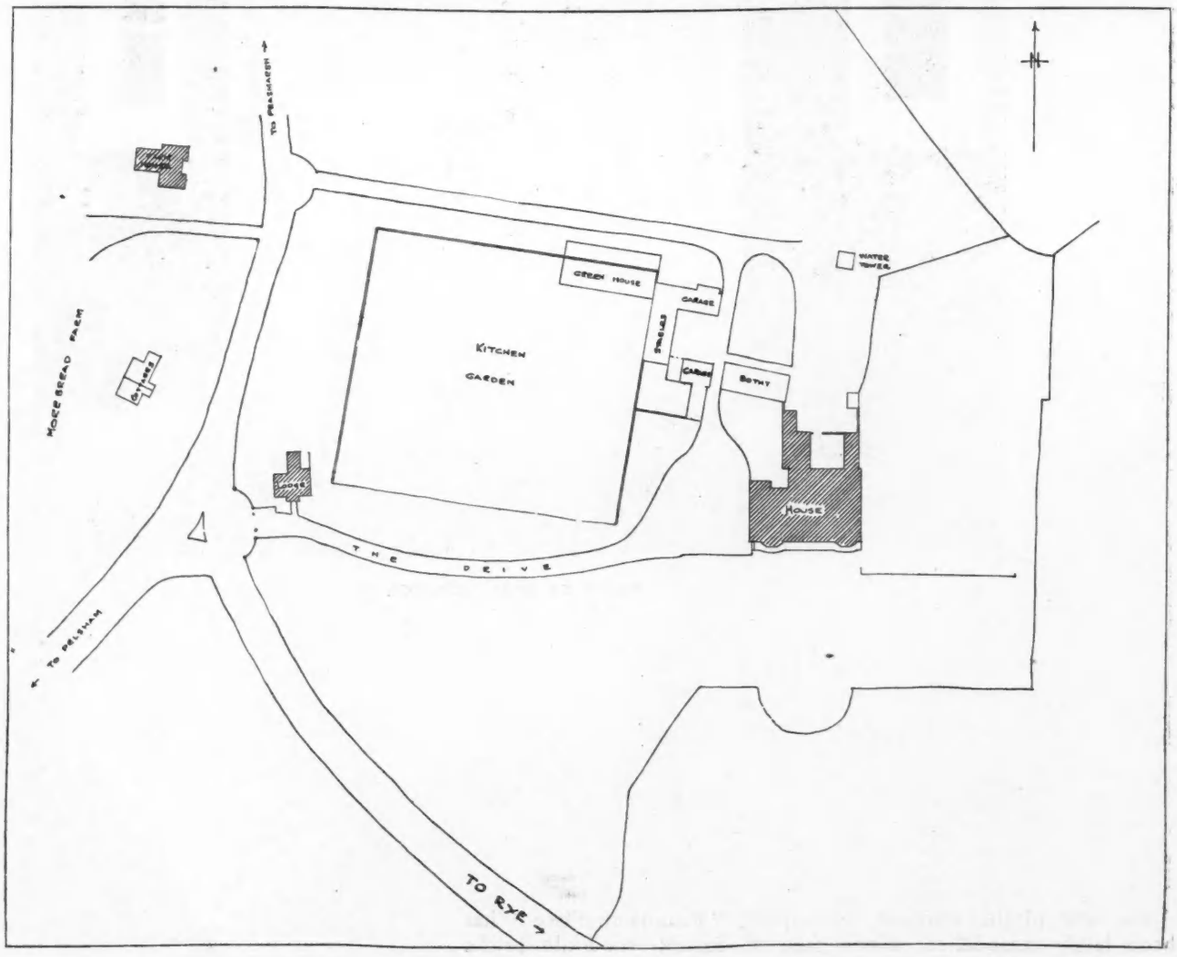


DETAIL OF MAIN ENTRANCE.

The seat of the Viscount Devonport, "Peasmarsh Place" has been lately remodelled, a new face of Sussex wood-kiln bricks having been added to the three principal façades in a simple Georgian manner. The new main entrance doorway is shown above.

SIR EDWIN COOPER, R.A., ARCHITECT.

THE NEW LODGE AND ENTRANCE GATEWAY. (THE GATES ARE TEMPORARY.)



THE LAYOUT OF GROUNDS, SHOWING (TOP LEFT) NEW FARMHOUSE.

"PEASMARSH PLACE," SUSSEX. SIR EDWIN COOPER, R.A., ARCHITECT.

THE HOUSE AS REMODELLED, FROM THE SOUTH-WEST

THE HOUSE AS REMODELLED, FROM THE SOUTH-EAST

"PEASMARSH PLACE," SUSSEX. SIR EDWIN COOPER, R.A., ARCHITECT.

"PEASMARSH PLACE," SUSSEX: REMODELLING AND ADDITIONS.

SIR EDWIN COOPER, R.A., ARCHITECT.

THE FARMHOUSE.

PEASMARSH PLACE, the seat of the Viscount Devonport, originally a comparatively small house on to which various additions had been made from time to time, has been remodelled by Sir Edwin Cooper, R.A.

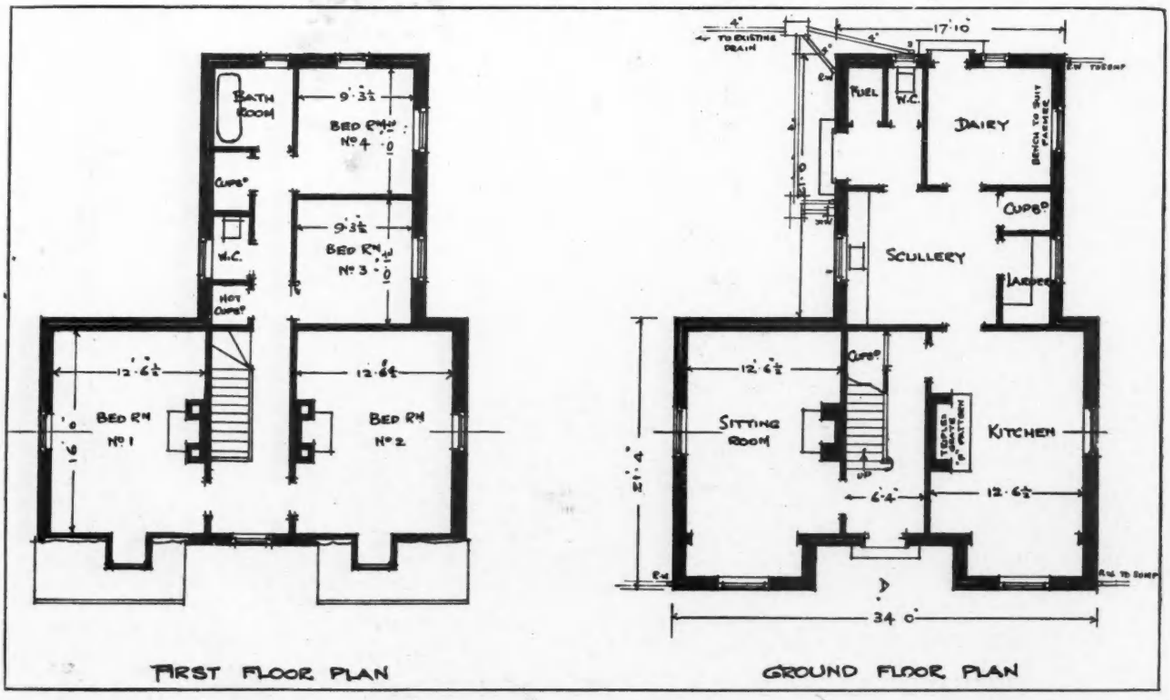
A new face of Sussex wood kiln bricks has been added to the three principal façades in a simple Georgian manner. The main entrance has a new doorway. The interior of the house has been entirely remodelled to suit present-day requirements.

A new drive has been formed, with a new lodge and gate piers. The lodge is built of similar bricks to that of the house. It has a red tile roof. The gates are temporary.

The water supply is from springs on the estate, and a new water tower of reinforced concrete with tiled roof and cedar wood sides has been built.

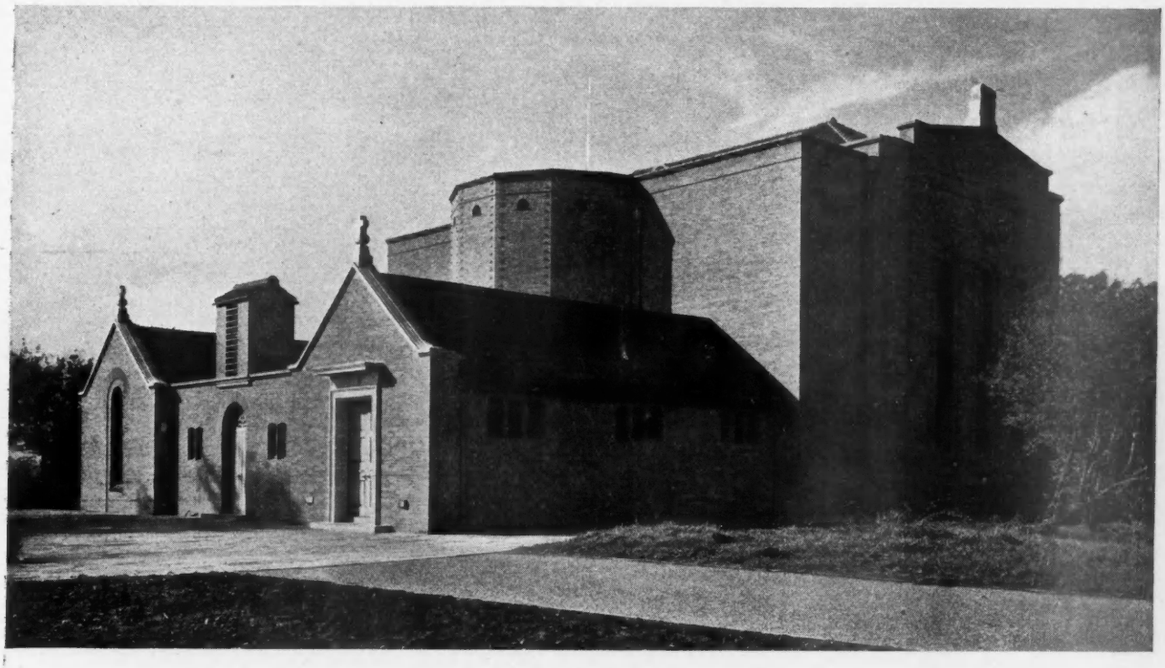
The farmhouse, built on simple lines to suit the farmer's requirements, is on the road side adjoining the existing farm buildings, and has been carried out by the same contractor as for the house, Mr. R. H. Harris, of Marlow.

Sub-contractors and specialists engaged on the buildings were: Kleine Co., Ltd., reinforced concrete; W. Smith, windows; Galsworthy, Ltd., lay lights and windows, gates, etc.; James Gibbons, Ltd., lock and door furniture; De Jong, fibrous plaster; Wm. Briggs and Co. Ltd., waterproofing; Allensor, Ltd., joinery; Acme Flooring Company, flooring; Goodlass, Wall, Ltd., paint; Leeds Fireclay Company, sanitary fittings; Richard Harris, heating engineer and plumbing; and Conway and Co., fire-grates.

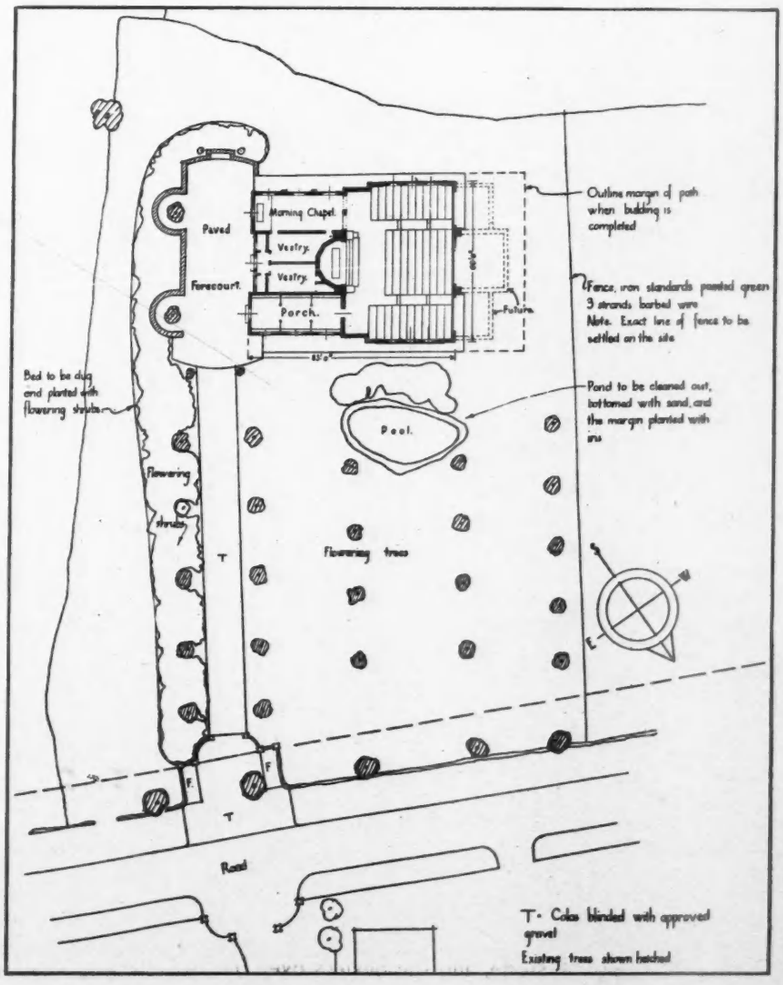


PLANS OF FARMHOUSE.

NEW CHAPEL, ALDENHAM SCHOOL, HERTFORDSHIRE.



VIEW FROM THE EAST.


Outline margin of path when building is completed
Fence, iron standards painted green 3 strands barbed wire Note. Exact line of fence to be settled on the site
Pond to be cleared out, bottomed with sand, and the margin planted with iris
Bed to be dug and planted with flowering shrubs
Morning Chapel
Vestry
Vestry
Porch
Forecourt
Paved
Future
Pool
Flowering shrubs
Flowering trees
Road
T- Coke blended with approved gravel
Existing trees shown hatched

Right : LAY-OUT OF SITE AND PLAN OF CHAPEL.

MESSRS. W. G. NEWTON AND PARTNERS, ARCHITECTS.

NEW CHAPEL, ALDENHAM SCHOOL, HERTFORDSHIRE.

DETAIL OF ENTRANCE FRONT.

MESSRS. W. G. NEWTON AND PARTNERS, ARCHITECTS.

The problem for solution was to build a chapel with seating for about 300 boys, all of whom were to be reasonably near the preacher ; also to provide adequate space for coats and straw hats. Included in the scheme were to be a morning-chapel, and also room for increasing the congregation on special occasions. The provision for this last requirement is for the present postponed, as is also the organ-chamber.

The site is separated from the main school buildings by a country road. The school gates are opposite the east corner of the site. The approach to the chapel, therefore, comes naturally at the sanctuary end of the new building.

These two considerations—the direction of the approach, and the desire to have no seats distant from the pulpit—have mainly influenced the plan. The main body of the chapel is at right angles to the normal axis. It is, in fact, as it were, a transept space. The long porch allows the entrance to be at the corner of the building which is nearest to the normal line of approach, and is also designed for the orderly stacking of hats and coats.

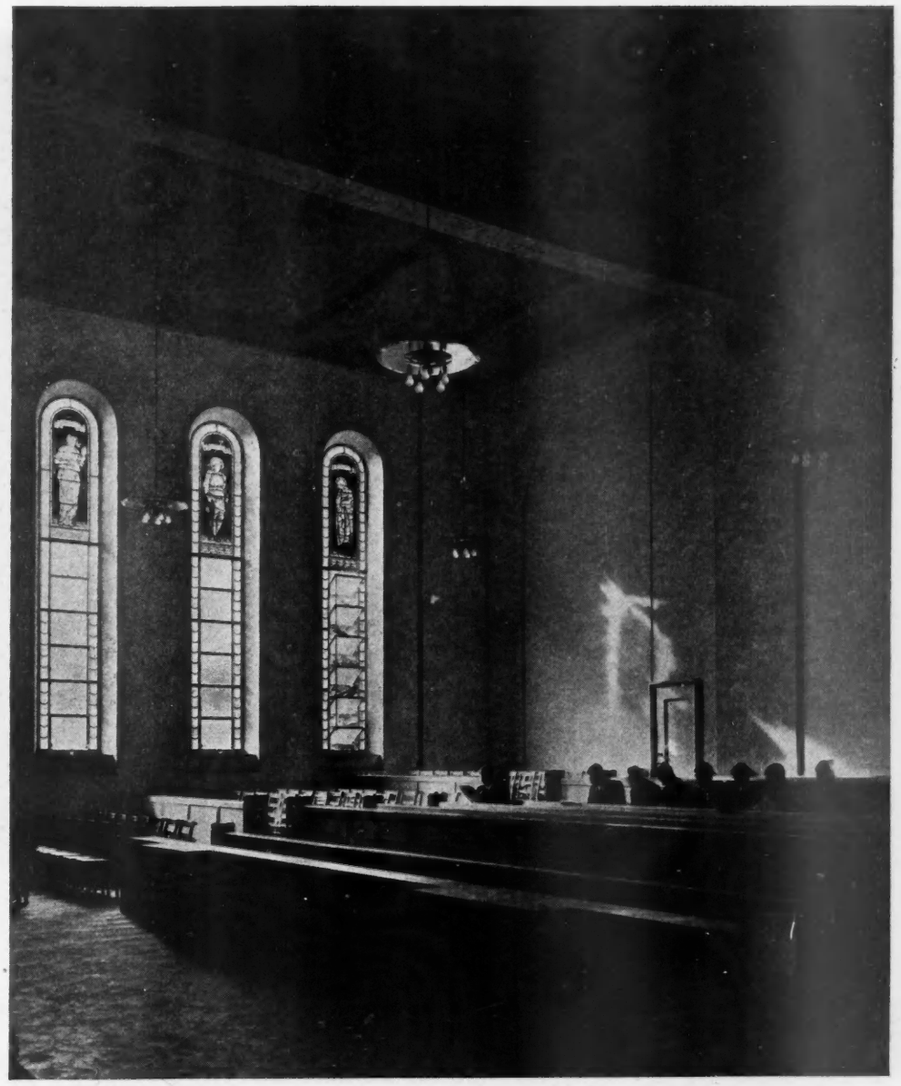
In the interior of the main chapel the walls are rough-plastered, and the concrete ceiling has a painted pattern running along the six " risers." The pews are stepped up in three shallow stages. The six windows are designed to contain six smaller painted windows by Burne-Jones, brought from the former chapel.

The morning-chapel corresponds with the long porch on plan. The polygonal sanctuary is lit from above by means of a reversed clerestory.

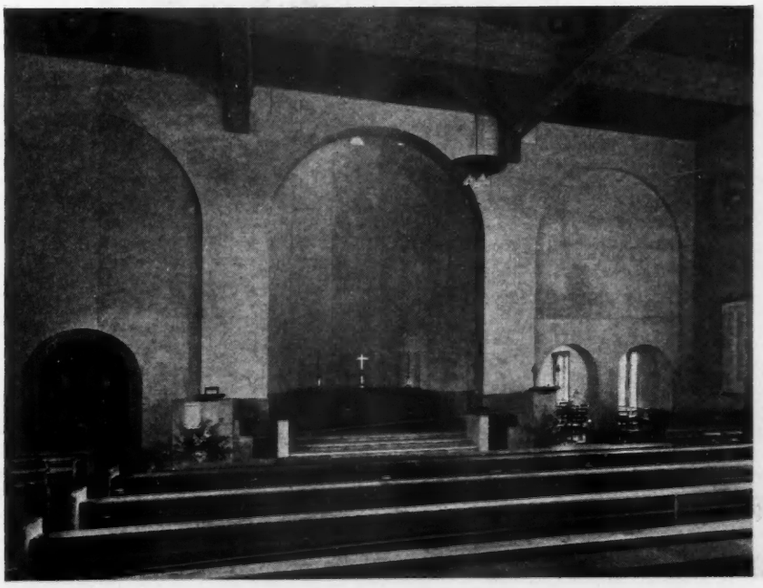
Heating is by electricity. Mr. Alan Durst has carved the gable stone, and the devices over the two door-heads, and his students the archangels in the inner door panels. The building is built in a quiet multi-coloured brick and Clipsham stone. The lay-out will be completed by planting flowering trees in the meadow between the chapel building and the school.

The general contractors were Messrs. Ekins & Co., Ltd., Hertford, and sub-contractors were : reinforced concrete work, The Trussed Concrete Steel Co., Ltd. ; bricks and tiles, Finnis & Ruault ; leaded windows, John Gibbs, Ltd. ; steel casements and rainwater heads and pipes, Wenham & Fowler ; chapel bell, Gillett & Johnston, Ltd. ; wood block flooring, Hollis Bros. & Co., Ltd. ; stonework in sanctuary, Art Pavements & Decorations, Ltd. ; altars in main chapel and morning-chapel, J. L. Green & Vardy, Ltd. ; door furniture, Walter Cassey, Ltd. ; electric lighting and heating, Buchanan & Curwen, Ltd. ; glass candlesticks and vases, Stevens & Williams, Ltd. ; and lay-out of grounds, W. Cutbush & Son.

NEW CHAPEL, ALDENHAM SCHOOL, HERTFORDSHIRE.

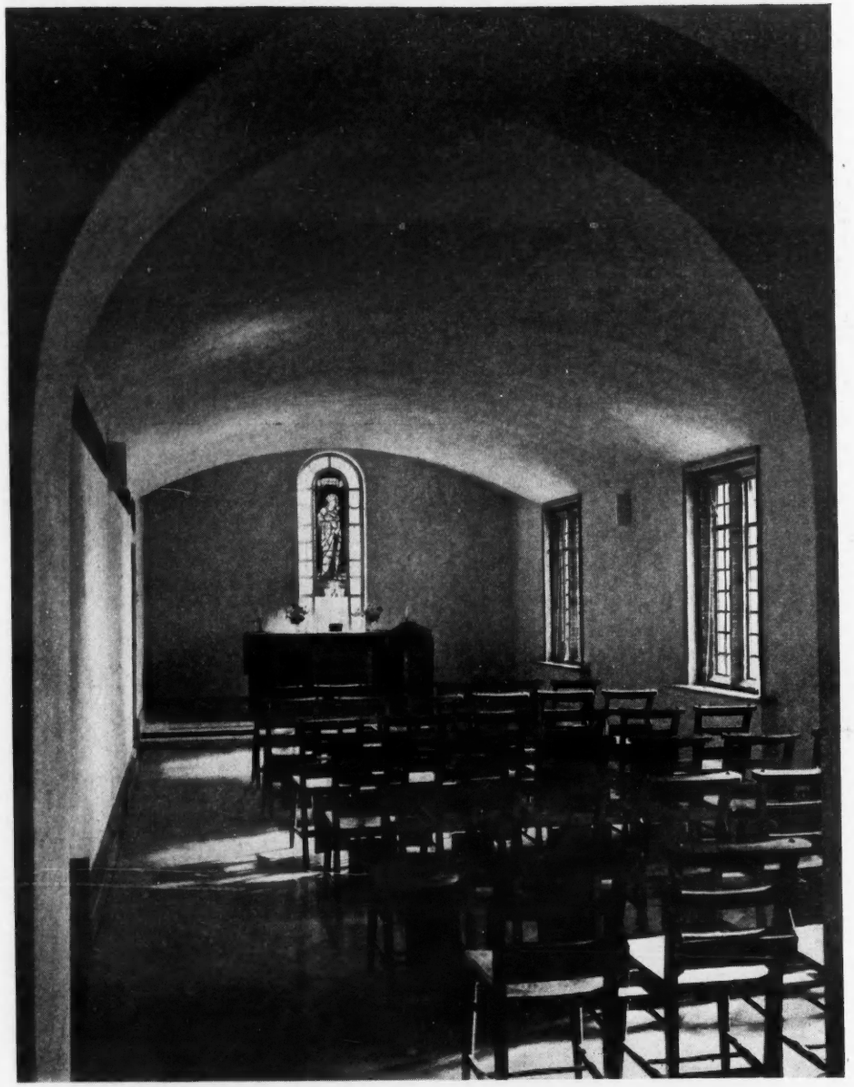


Right : VIEW LOOKING SOUTH-WEST.

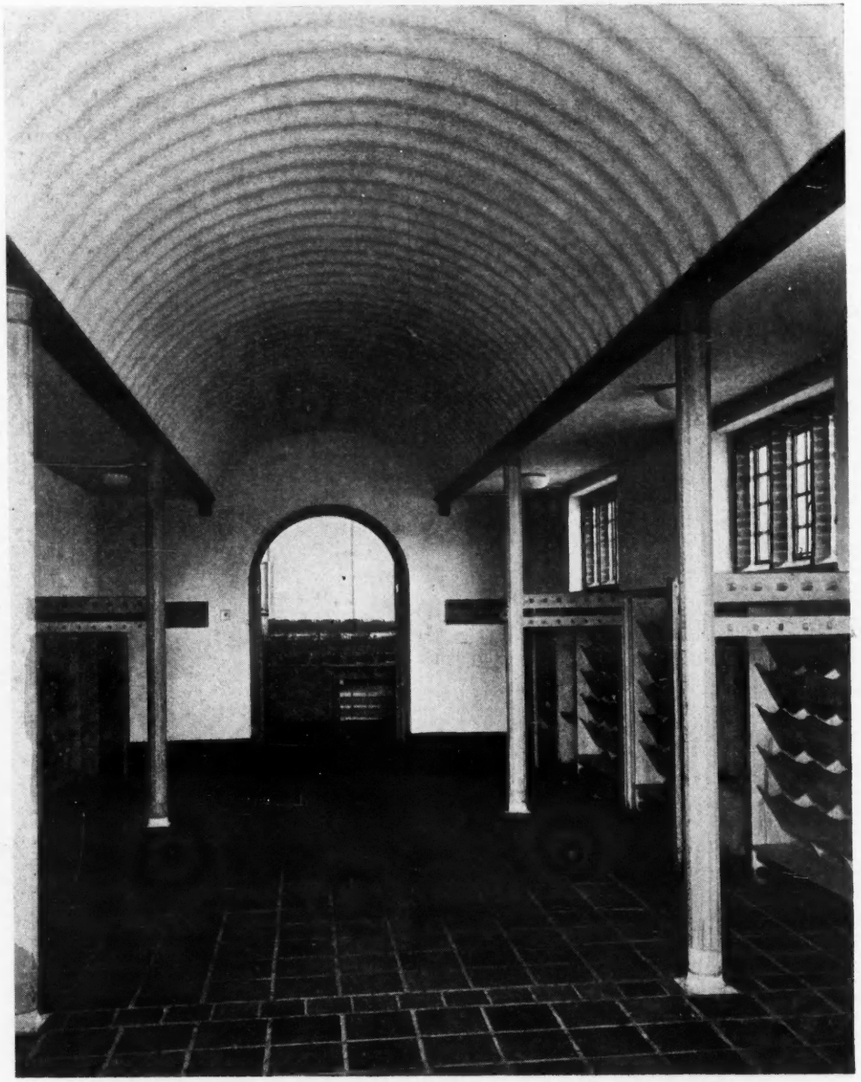


Left : VIEW OF ALTAR ALCOVE.

MESSRS. W. G. NEWTON AND PARTNERS, ARCHITECTS.



THE MORNING CHAPEL.



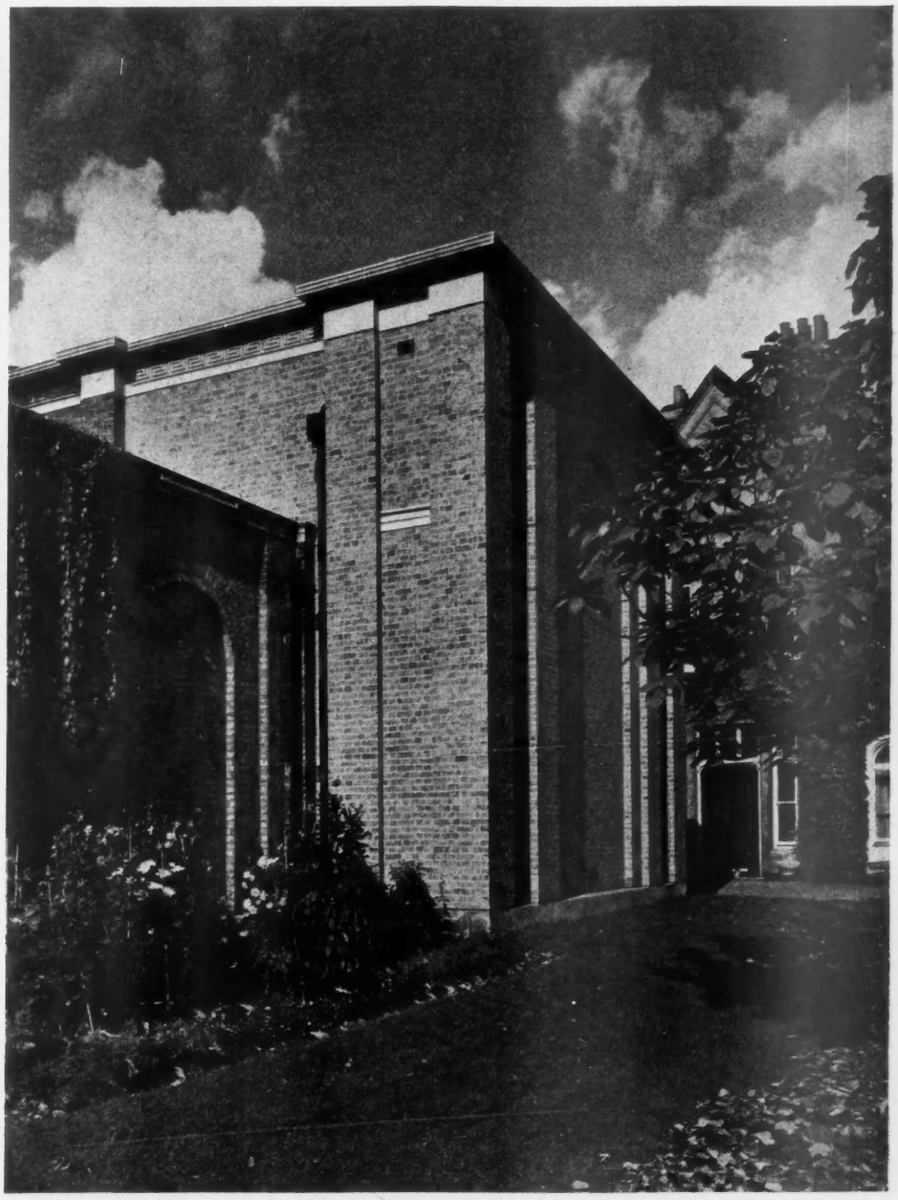
THE PORCH.

NEW CHAPEL, ALDENHAM SCHOOL, HERTFORDSHIRE.

MESSRS. W. G. NEWTON AND PARTNERS, ARCHITECTS.

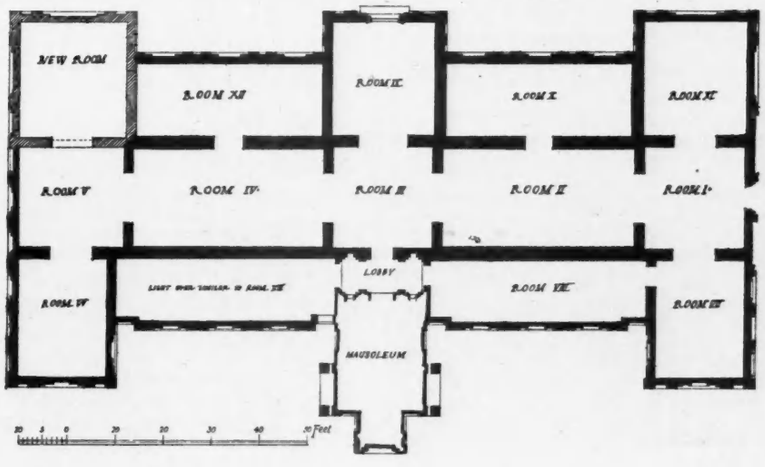
EXTENSION TO THE DULWICH PICTURE GALLERY, S.E.

MR. H. S. GOODHART-RENDEL, P.R.I.B.A., ARCHITECT

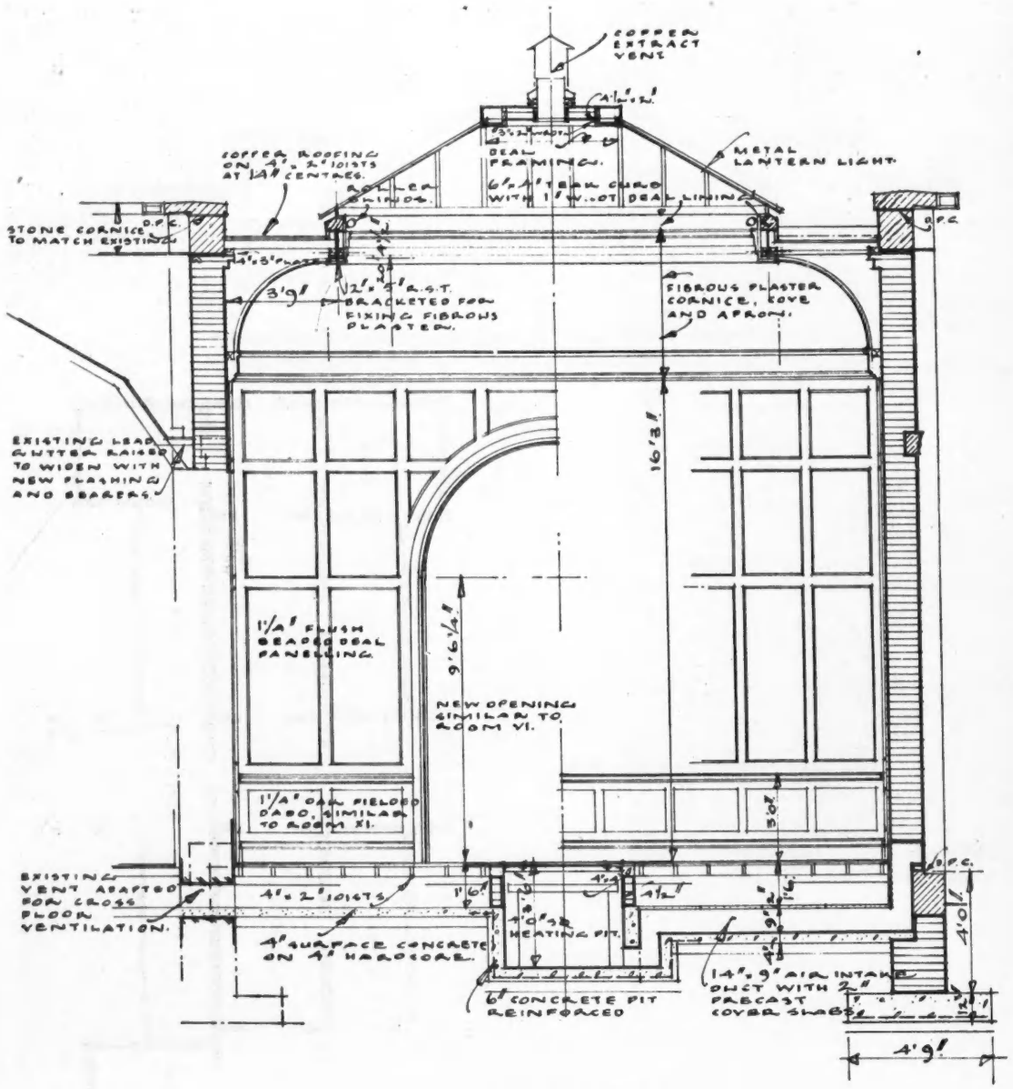


EXTERIOR OF NEW GALLERY

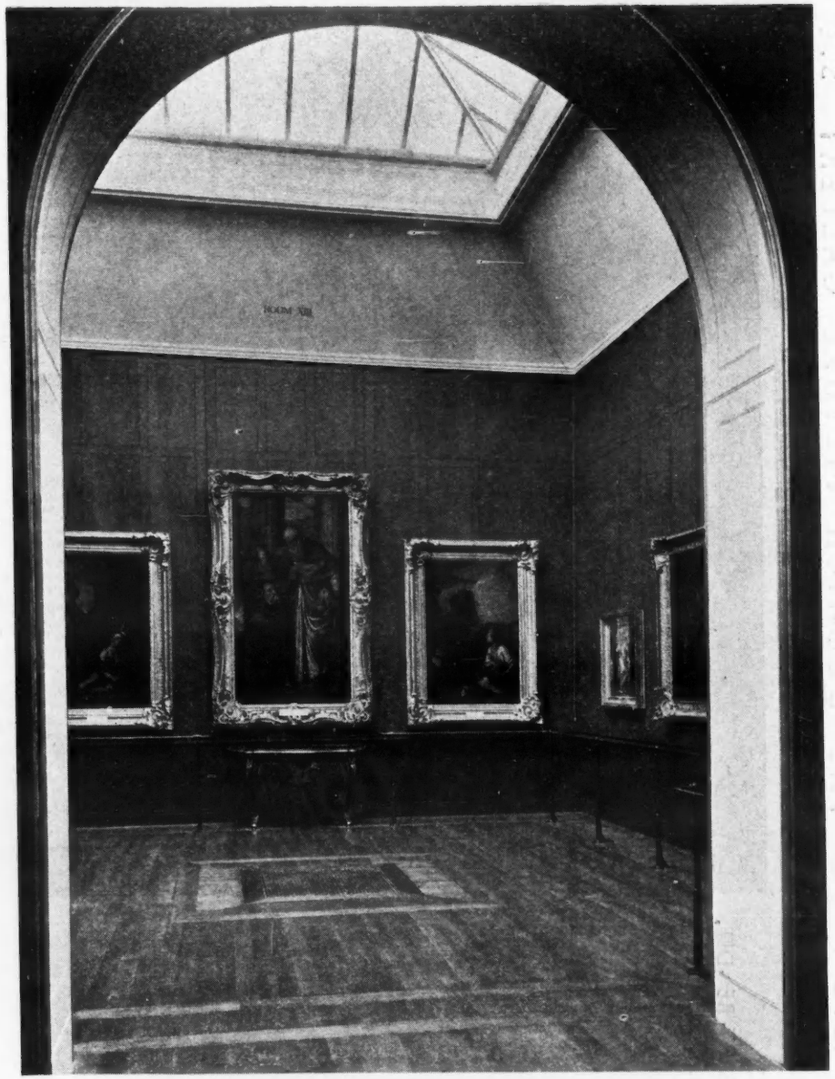
EXTERNALLY, this new gallery completes a symmetrical composition executed previously in part as an addition to the galleries. The design and detail were therefore strictly governed by what already existed. Internally, the gallery follows the general section and arrangement of the corresponding existing gallery, but is varied in detail. The walls inside are lined with flush deal painted panelling, similar to that provided by Soane in the original galleries, with a plaster ceiling and flat cove above. The walls externally are of London stock brick, jointed in the recession of the original gallery with a narrow round jointing tool. The dressings are in Portland stone, the roof of copper.



The general contractors were Messrs. W. J. Mitchell and Son, Ltd. Following were sub-contractors: Oak flooring, Hollis Bros.; ornamental plastering, Thomas E. Wilson, Ltd.; heating, Z. D. Berry and Sons; lead r.w. pipes, Yannedis and Co.; bronze rails and grilles, J. Gibbons; metal skylight, Haywards, Ltd.; burglar alarms, Rely-a-Bell Burglar and Fire Alarm Co.; copper roofing, Fredk. Braby and Co.; steelwork, Dorman, Long and Co.; and blinds, A. J. Shingleton.


COPPER EXTRACT VENT
METAL LANTERN LIGHT
COPPER ROOFING ON 4" × 2" JOISTS AT 14" CENTRES.
DEAL FRAMING.
STONE CORNICE TO MATCH EXISTING
FIBROUS PLASTER CORNICE, COVE AND APRON.
EXISTING LEAD GUTTER RAISED TO WIDEN WITH NEW FLASHING AND BRACKETS
16'3"
1¼" FLUSH BEADED DEAL PANELLING.
NEW OPENING SIMILAR TO ROOM VI.
1¼" OAK FIELDED DADO, SIMILAR TO ROOM XI.
EXISTING VENT ADAPTED FOR CROSS FLOOR VENTILATION.
4" × 2" JOISTS
4" SURFACE CONCRETE ON 4" HARDCORE.
HEATING PIT.
6" CONCRETE PIT REINFORCED
14" × 9" AIR INTAKE DUCT WITH PRECAST COVER SLABS
4'9"

CROSS SECTION OF GALLERY.



INTERIOR OF GALLERY.

EXTENSION TO THE DULWICH ART GALLERY, S.E. MR. H. S. GOODHART-RENDEL, P.R.I.B.A., ARCHITECT.

"FIONA HOUSE," HEATHCOTE STREET, BLOOMSBURY, W.C.

MESSRS. MARSHALL & TWEEDY, FF.R.I.B.A., ARCHITECTS.

THE FRONT TO HEATHCOTE STREET

On the instructions of a Committee headed by Lady Violet Astor, this building was erected to take the place of old premises, devoted to the same cause, of which the lease had expired. Its purpose is to provide accommodation and residential club facilities for some seventy ladies, and it is designed to provide as near independent accommodation as is possible in this type of building.

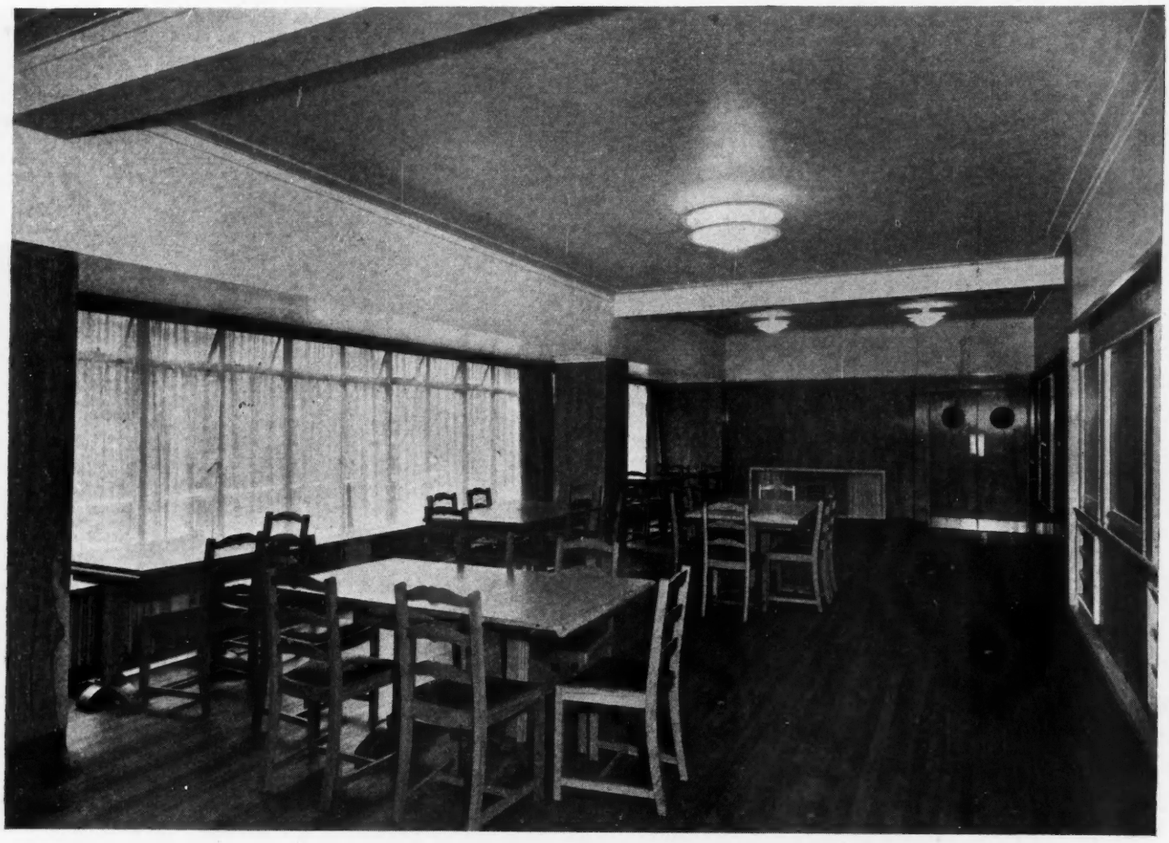
Each tenant is provided with a furnished bed-sitting room and every two tenants share a bathroom situated between each pair of rooms. A floor maid is provided to each floor, and there are work and ironing rooms and also wardrobe-rooms for the temporary storage of clothing should a tenant be absent from the building for any length of time. The five upper floors of the building are entirely devoted to the bed-sitting rooms with the exception of a small department on the first floor which is occupied by the maids.

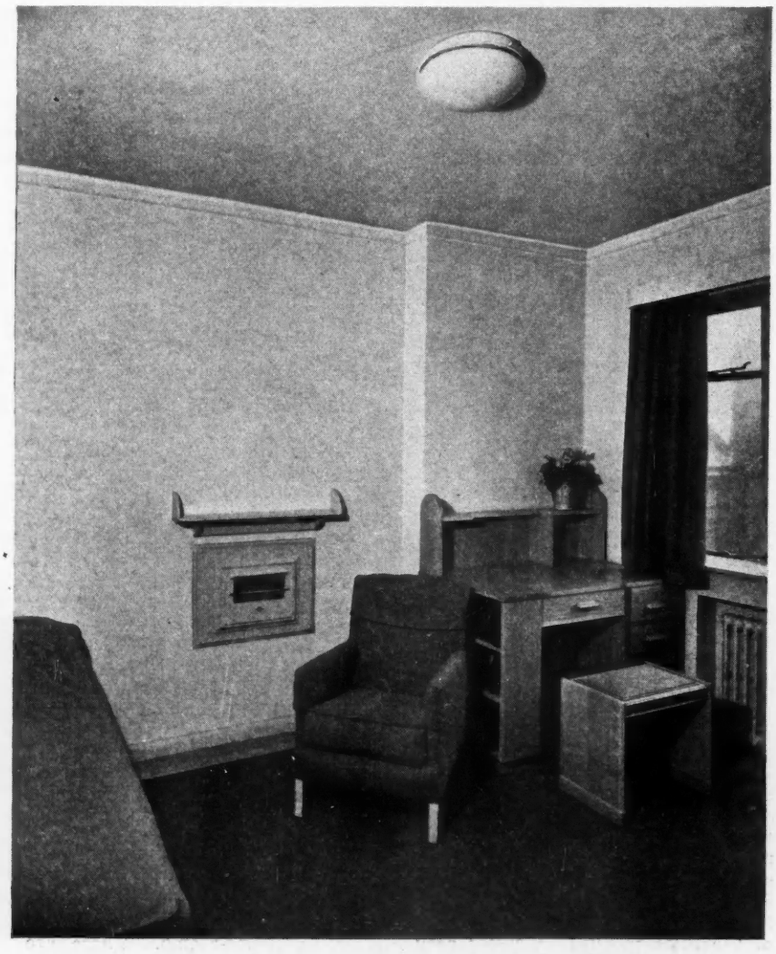
The corridors are laid with cork tiles and the bathrooms with "Ruberoid" flooring. The walls of the bed-sitting rooms, corridors and bathrooms are painted, while the woodwork generally is finished in high gloss paint. The ground floor is devoted almost entirely to the public rooms.

Entered directly from the main entrance hall is the lounge and reading-room. This room is panelled to ceiling height in Australian walnut flush panels with natural sycamore beadings and radiator frames. The fireplace is in sycamore and marble with the cheeks of the interior built in silver grey brickettes. The floor is in Gurjun strip. Lighting is by means of four fittings suspended in circular plaster coves in the false ceiling.

On the left of the main entrance is the dining-room, panelled to frieze height in English elm with sycamore enrichment. This room has a continuous window from end to end, looking out on to Heathcote-street. Set in the panelling are balanced hatches, communicating direct with the kitchen. The floor is in oak strips. An electric fire set in a marble surround is provided at one end of the room. Adjoining the dining-room is a sitting-room, which may be used by tenants for small parties or the reception of visitors, etc. It is fitted with a large bookcase and electric fire.

On the right of the main entrance are the matron's and assistant matron's living-rooms. There are also two small rooms used as reception-room and office. All these





Above : THE DINING-ROOM.
Left : BED-SITTING ROOM.

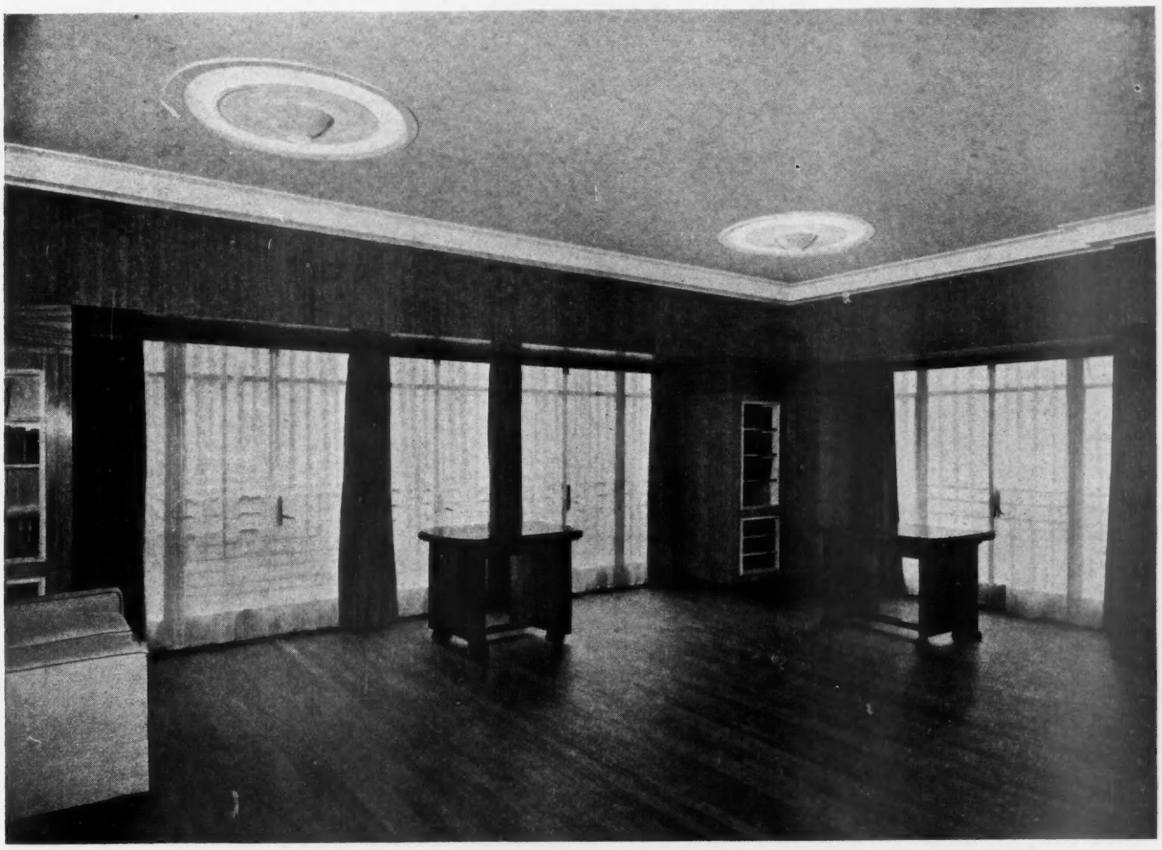
rooms are decorated in a similar manner to the bed-sitting rooms on the upper floors.

The kitchen and staff rooms are situated at the rear of the dining-room, looking on to Prospect-place. The kitchen is tiled throughout to a height of 6 ft., while the floor is in 9-in. by 9-in. cream quarry tiles, laid with a ¾-in. white joint. Teak sinks are provided in the scullery. Kitchen cabinets are arranged along one wall with cupboard over the service and yard door. A large coke "Aga" cooker and boiler is provided, and the mechanical equipment consists of a "Hobart" mixer and potato peeler, both with accessories, together with coffee and tea appliances. The basement accommodation consists of heating chamber, baggage store and staff cloakrooms and lavatories.

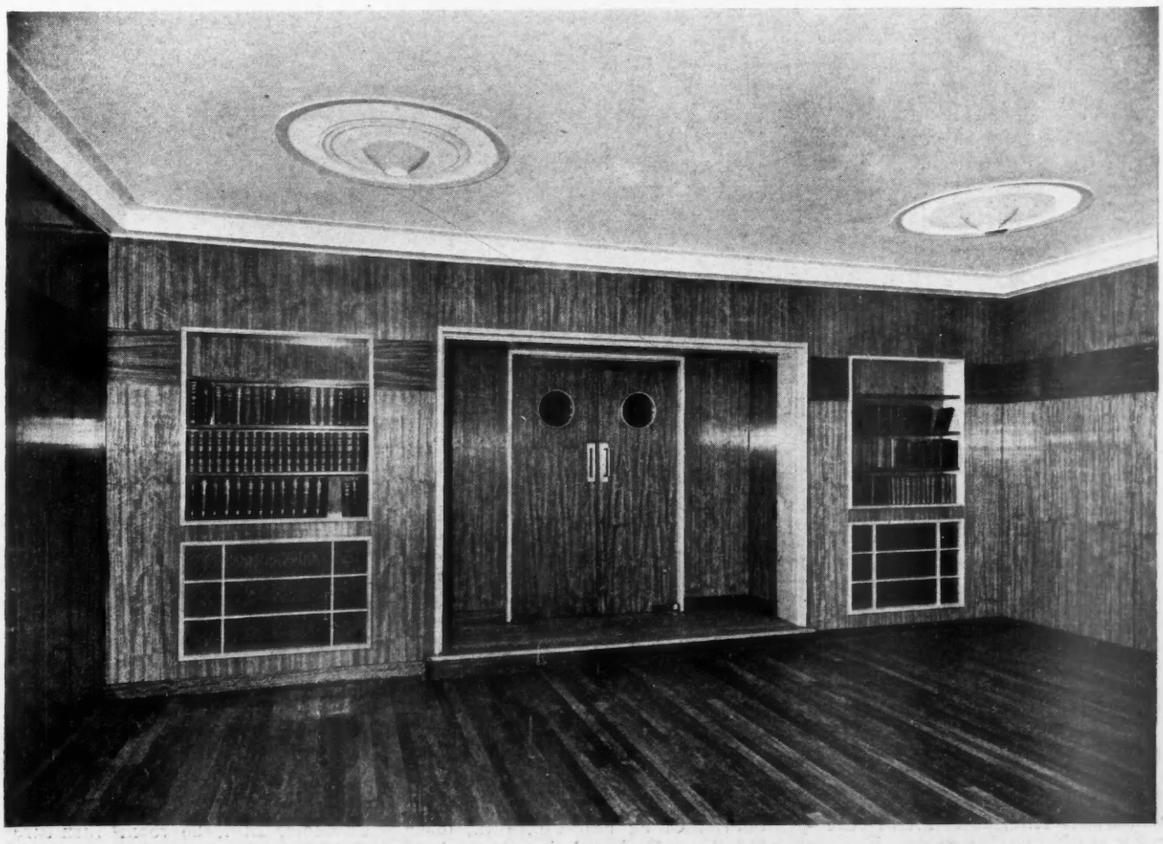
The elevations are faced with 2-in. buff bricks suspended from a reinforced concrete frame, with precast stone surrounds. Internal partitions are in 2½-in. hollow blocks. The whole of the interior joinery was carried out by the general contractors, who also fixed the panelling in the lounge and the dining-room. Messrs. Langdon and Every were the quantity surveyors.

The general contractors were Messrs. Kirk and Kirk, Ltd., of Putney, S.W.15, and sub-contractors were: Flooring Contractors, Ltd., reinforced concrete frame and floors; W. H. Earley, plumbing and drainage work; Matthew Hall, Ltd.,

"FIONA HOUSE," BLOOMSBURY, W.C. MESSRS. MARSHALL AND TWEEDY, FF.R.I.B.A., ARCHITECTS.

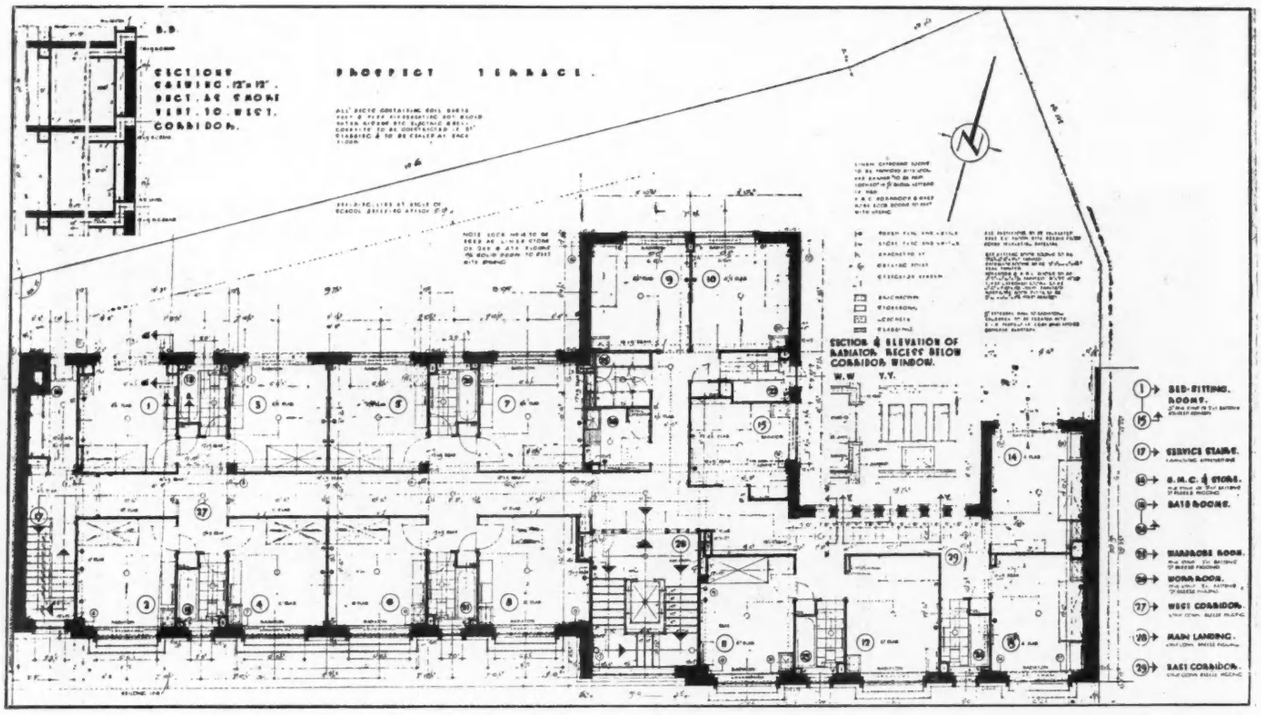


LOUNGE AND READING-ROOM, LOOKING FROM ENTRANCE DOORS.

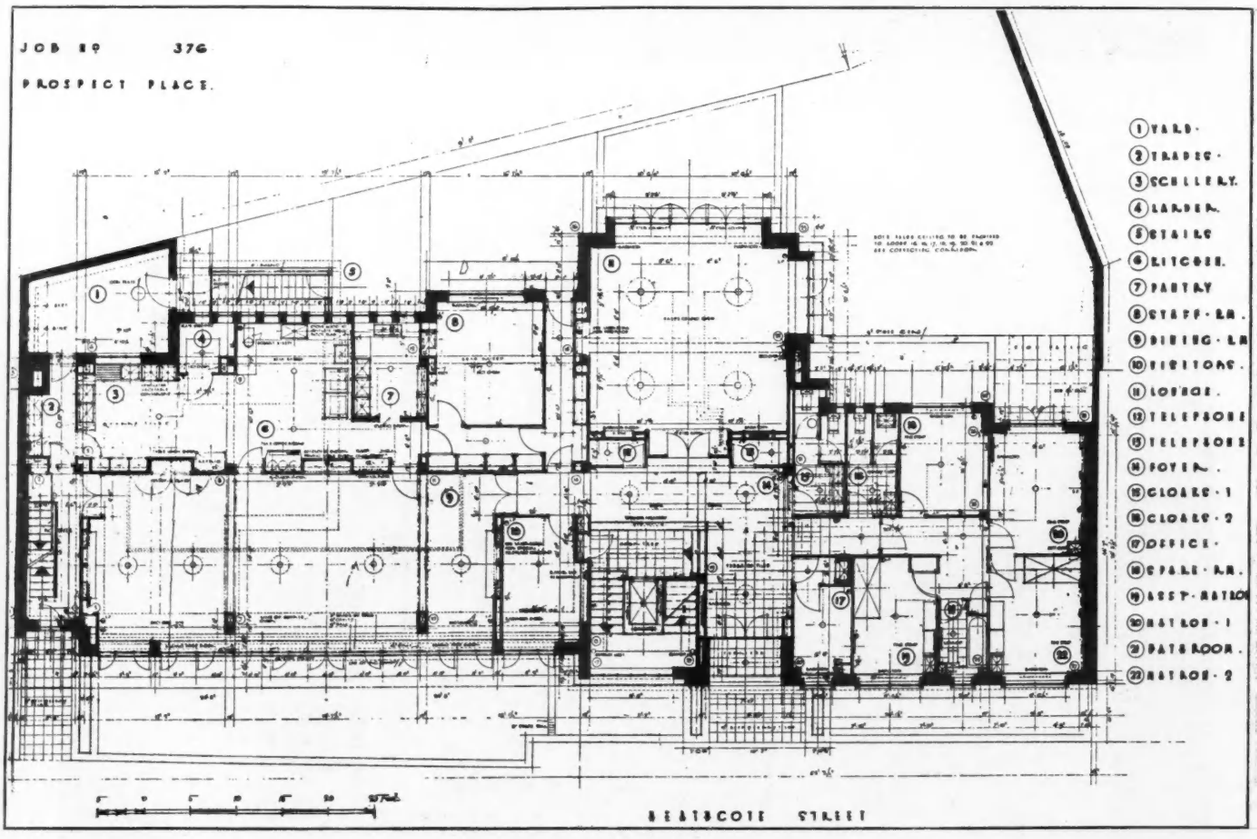


LOUNGE AND READING-ROOM, LOOKING TOWARDS ENTRANCE DOORS.

"FIONA HOUSE," BLOOMSBURY, W.C. MESSRS. MARSHALL AND TWEEDY, FF.R.I.B.A., ARCHITECTS.



TYPICAL UPPER-FLOOR PLAN.



GROUND-FLOOR PLAN.

heating and hot-water installation; Berkeley Electrical Company, electrical works; Marryat and Scott, Ltd., lift; Williams and Williams, windows; Kingsmill Metal Company, lift enclosure and door grilles; Figg and Company, cork floors; R. Y. Ames, facing bricks; Bratt, Colbran and Co., fireplaces; Aga Heat, Ltd., cooking equipment; Comyn Ching and Co., Ltd., door furniture; Torbay Paint Co., paint; panelling, supplied by Wm. Mallinson and Sons; Dennison, Millais and J. G. Matthews and Co., furnishings; and Peerless Kitchen Cabinets, Ltd., bedroom furniture and kitchen fittings.

"FIONA HOUSE," BLOOMSBURY, W.C. MESSRS. MARSHALL AND TWEEDY, FF.R.I.B.A., ARCHITECTS.

NEW SANATORIUM, HOWELL'S SCHOOL, DENBIGH, WALES.

MR. MAURICE WEBB, F.R.I.B.A., AND COLONEL GRONWY GRIFFITH, F.R.I.B.A., ASSOCIATED ARCHITECTS.

VIEW FROM SOUTH.

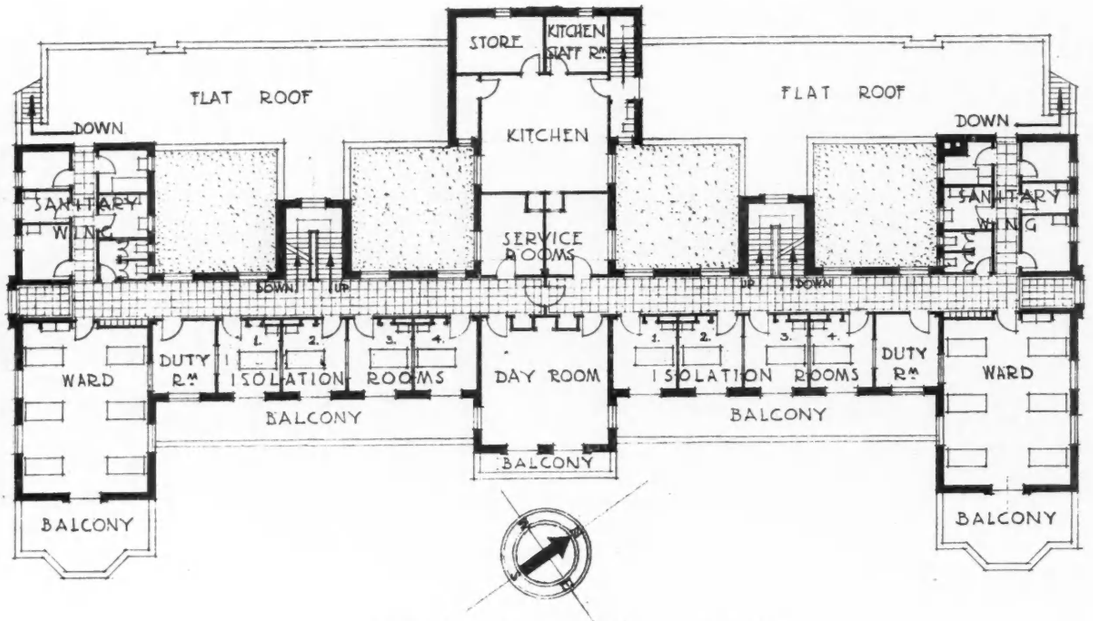
VIEW FROM DENBIGH CASTLE, WITH SANATORIUM BELOW.

NEW SANATORIUM, HOWELL'S SCHOOL, DENBIGH, WALES.

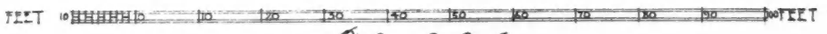
MR. MAURICE WEBB, F.R.I.B.A., AND COLONEL GRONWY GRIFFITH, F.R.I.B.A., ASSOCIATED ARCHITECTS.

THE original school buildings were designed by Herbert Williams, Surveyor to the Drapers' Company, in 1858, and provided accommodation for 55 boarders and 50 day girls. To-day the school has 335 boarders and 50 day girls.

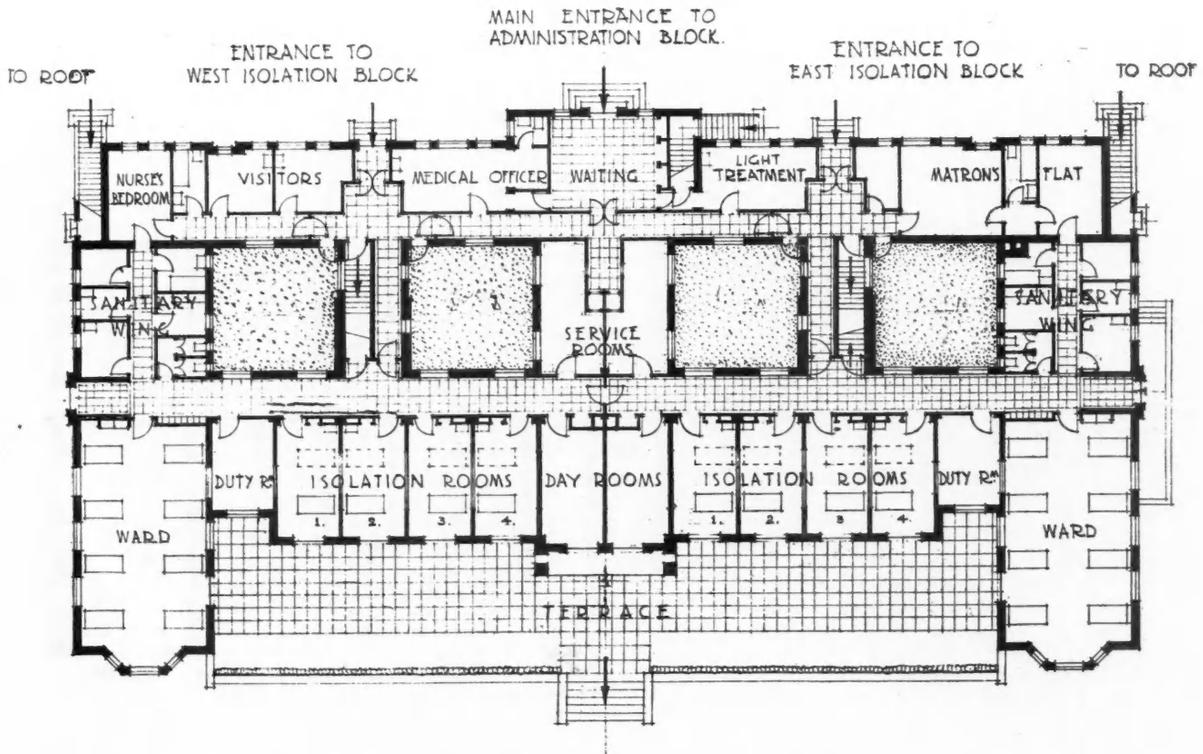
THE NEW ACCOMMODATION. — In 1931, we published photographs of the additions carried out by Mr. Maurice Webb, F.R.I.B.A., and this year further additions have been made by him, consisting of a school block containing seven additional classrooms, a large lecture theatre,



FIRST FLOOR PLAN



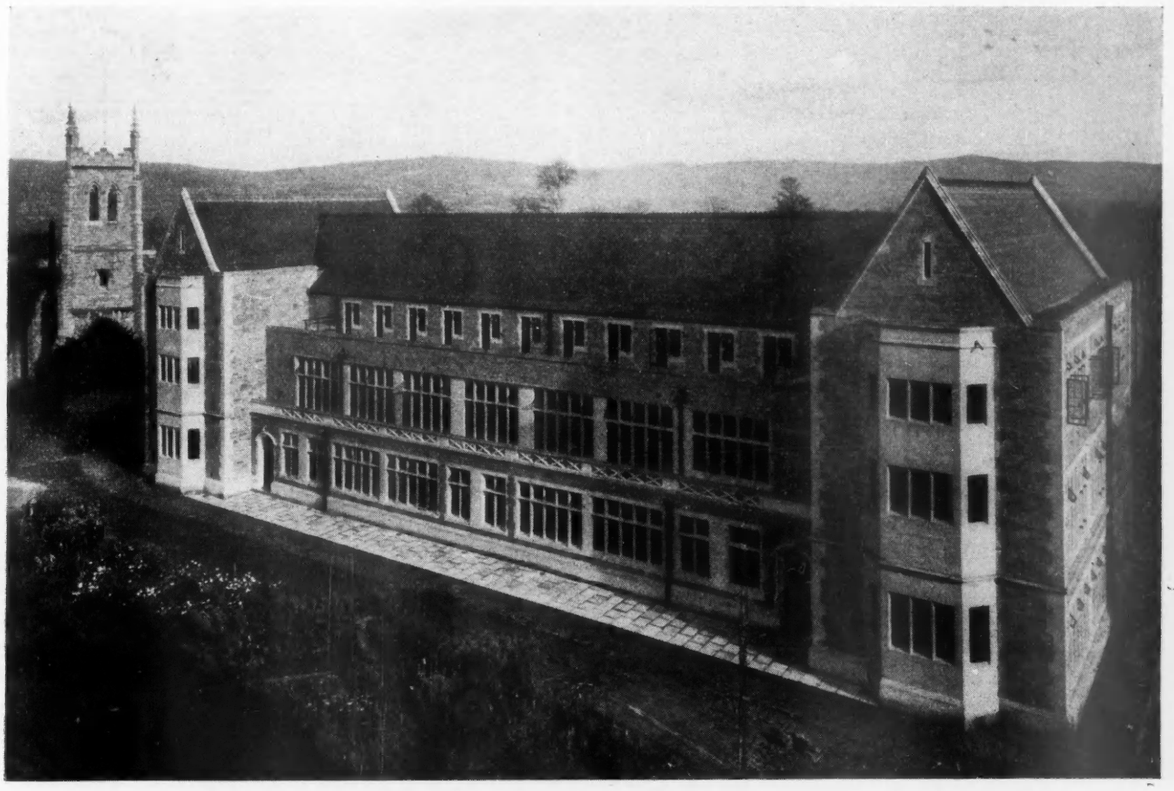
Scale of feet



GROUND FLOOR PLAN

NEW SCHOOL BLOCK, HOWELL'S SCHOOL, DENBIGH, WALES.

MR. MAURICE WEBB, F.R.I.B.A., ARCHITECT.



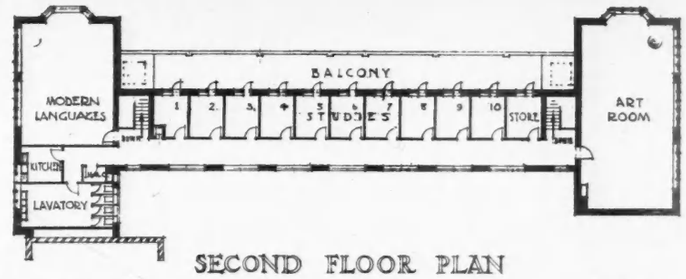
three laboratories and ten studies. Also, in collaboration with Colonel Gronwy Griffith, F.R.I.B.A., Mr. Webb has designed a new sanatorium block.

THE SCHOOL BLOCK.—For convenience this block is attached by a connecting corridor, on two floors, to the existing classrooms, with a large new lavatory block in between the two. The accommodation provided is placed on three floors.

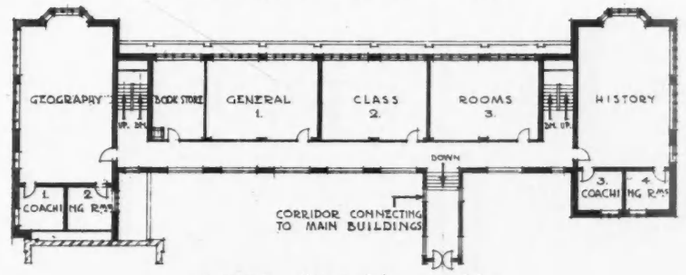
The exterior design of the building follows generally that of the dining and school hall wings, and is finished in local stone with Bath stone dressings and slate roofs, and forms a screen to some of the older buildings which were carried out at different times and in different materials.

THE SANATORIUM.—The governing body, after other experiments, decided to erect a building designed solely for the purpose of a sanatorium, in spite of the fact that two-thirds of it would probably be empty for the greater part of every year. After consultation with other schools, the Board of Education and the School Medical Officers, it was found that the current view is that where possible, beds should be provided for 15 per cent. of the boarders, and the building was built accordingly to take 52 beds, at a total cost, including equipment, of something in the neighbourhood of £35,000.

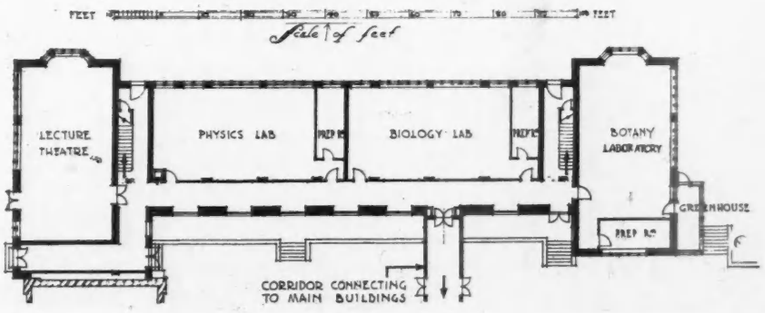
The building faces south, overlooking a beautiful stretch of country, and is planned in five distinct sections. Administration and two nursing sections are on ground



SECOND FLOOR PLAN

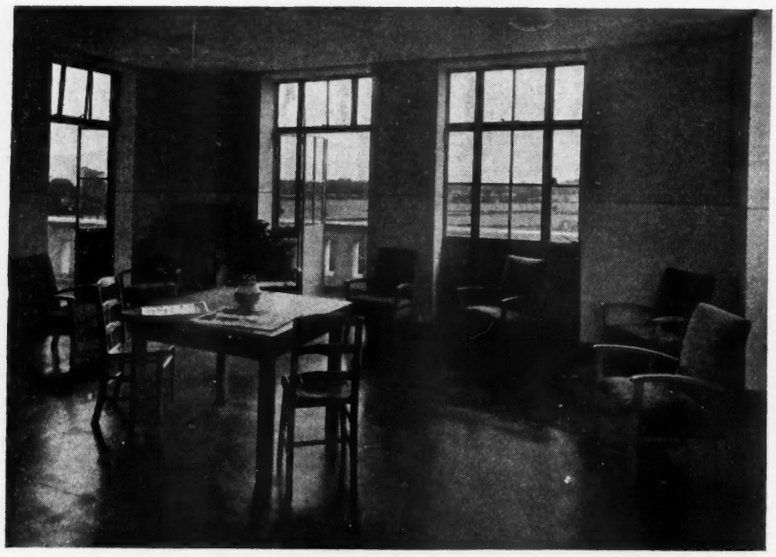


FIRST FLOOR PLAN



GROUND FLOOR PLAN

THE SANATORIUM A WARD.



THE SANATORIUM : RECREATION ROOM FOR CONVALESCENTS.

SCHOOL BLOCK : A FORM ROOM.

floor, and two nursing sections on the first floor. Each nursing section is planned as a complete unit with a separate entrance, and contains a ward for six-eight beds, four isolation rooms, a day room, duty room, service room and its own sanitary wing, so that different types of infection can be dealt with at the same time, in addition to the fourth section devoted to non-infectious cases, of which there are always a few. Internally the sections are entirely cut off from each other. A central kitchen on the first floor serves the whole building. The second floor is occupied by nurses' and maids' bedrooms and sitting-rooms, and in the basement are disinfecting, linen and store-rooms and boiler house. The administrative block, which will be in daily use for girls reporting sick to the doctor or matron, is on the ground floor and has its own entrance and waiting-room. Balconies and terraces in addition to the flat roofs have been arranged for girls in the convalescent stage.

The exterior design of the building departs entirely from that of the old buildings and has been dictated solely by the internal planning and the uses to which the building is put, but at the same time, an attempt has been made in its colour and texture to make it harmonise with the beautiful ruins of Denbigh Castle, under which it stands.

Mr. A. E. Cameron, A.R.I.B.A., of Mr. Maurice Webb's office, was in charge of the drawings and supervised the work during its execution. Mr. E. Dare was the clerk of works, and the contractors for both buildings were Messrs. J. Long and Sons, Ltd., of Bath, who have done the work at the school during the last ten years. The contractors also made the fixed furniture, the movable furniture being made by Mr. Gordon Stark to the architects' designs. Messrs. George Corderoy and Company were the quantity surveyors. The photographs were taken by Mr. Ronald Thompson, of Denbigh.

The principal sub-contractors were: Heating, J. Jeffreys and Co., Ltd.; lighting, W. J. Furse and Co., Ltd.; drainage, Dent and Hellyer, Ltd.; "Paropa" roofing, Frazzi, Ltd.; floors and floor covering, The Granwood Flooring Co., Ltd., and J. R. Smith, Ltd.; lifts, J. and E. Hall, Ltd.; ironmongery, James Gibbons, Ltd.; windows, The Crittall Manufacturing Co., Ltd.; acoustic work, May Acoustics, Ltd.; metal partitions, Roneo, Ltd.; kitchen equipment, Benhams, Ltd.; floor and wall tiling, Carter and Co., Ltd.; blinds, Accordo Blinds, Ltd.; electric light fittings, Troughton and Young; and structural floors, the Trussed Concrete Steel Co., Ltd.

ADDITIONS TO HOWELL'S SCHOOL, DENBIGH, WALES.

THREE BLOCKS OF FLATS, CROMER STREET, W.C.

GENERAL VIEW OF "EDWARD BOND HOUSE."

A slum replacement scheme, these blocks of flats (of which the block shown above is one) have been built as a unified entity in Cromer Street, W.C. They provide a new street façade to the 50-year-old property which lies behind. Externally the materials used are red facing bricks except for the ground floor, which has been faced in stone.

MR. ARTHUR WM. KENYON, F.R.I.B.A., ARCHITECT.

THREE BLOCKS OF FLATS, CROMER STREET, W.C.

These three blocks have been built for the East End Dwellings Co., Ltd., to replace slum property. As these blocks were in the same ownership, it was possible to design them as a street façade. There are four storeys above the ground floor and basement, and each block contains 18 flats. The property behind these blocks was built about 50 years ago, and these front blocks complete the scheme of flats.

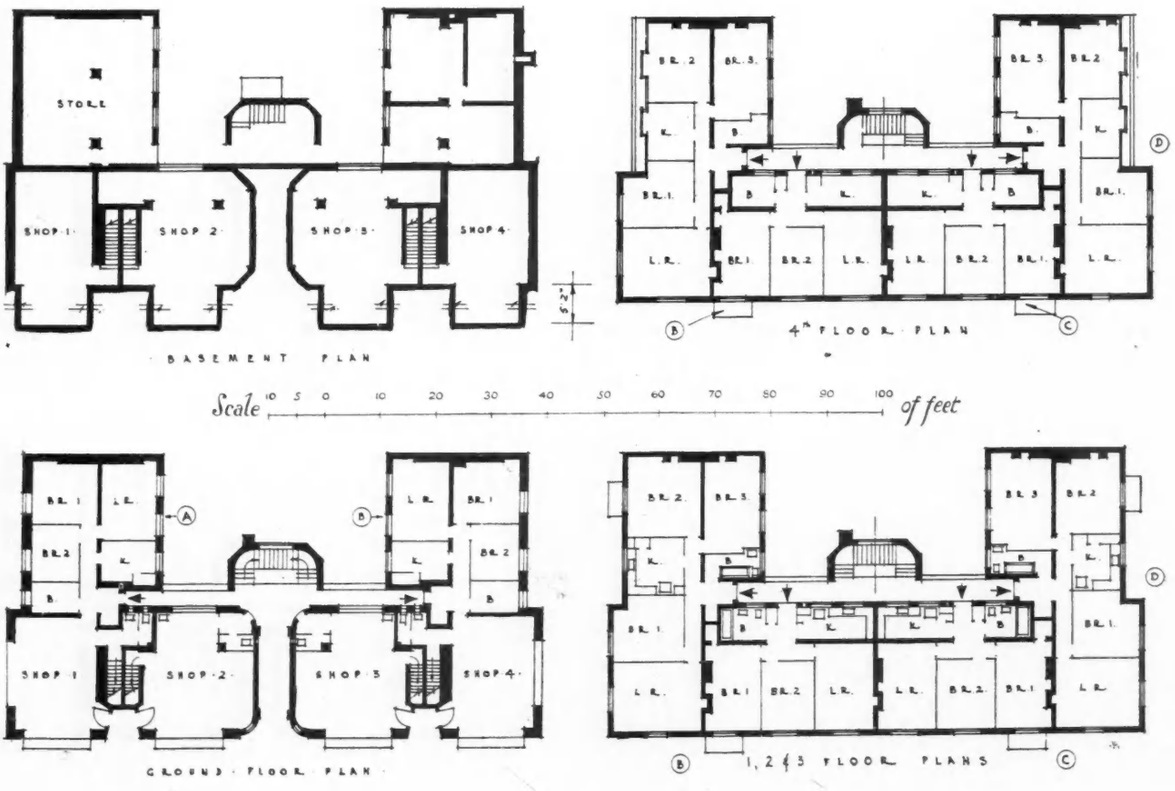
The construction is brick external walls with filler joists and concrete floors, and brick cross walls. The staircases are precast concrete construction with iron balustrades and walls tiled in buff coloured glazed tiles. The connecting balconies are finished in asphalt.

The kitchens and bathrooms are tiled, and there is a constant supply of hot water supplied free from a central boiler to each block. The external brickwork is in red facing bricks. Mr. H. J. Venning, P.A.S.I., was the quantity surveyor, the architect being Mr. Arthur Wm. Kenyon, F.R.I.B.A., M.T.P.I.

The general contractors were Messrs. George Parker & Son, Ltd.; and the sub-contractors were : Heating engineers, Young, Austen & Young ; electrical engineers, G. W. Franklin & Sons ; metal balustrades, Tudor Art Metal Company and Light Steelwork, Ltd. ; tiling, Carter's and Tile Decorations ; locks, Comyn Ching and Carter & Aynsley ; pavement lights, Haywards, Ltd. ; fireplaces, O'Brien Thomas and Folkard, Ltd. ; sanitary fittings, Shanks & Co. ; blinds, J. Dean ; bricks, Daneshill Brick & Tile Co. ; stonework, F. Harris ; roof and tiling, John Williams & Co.

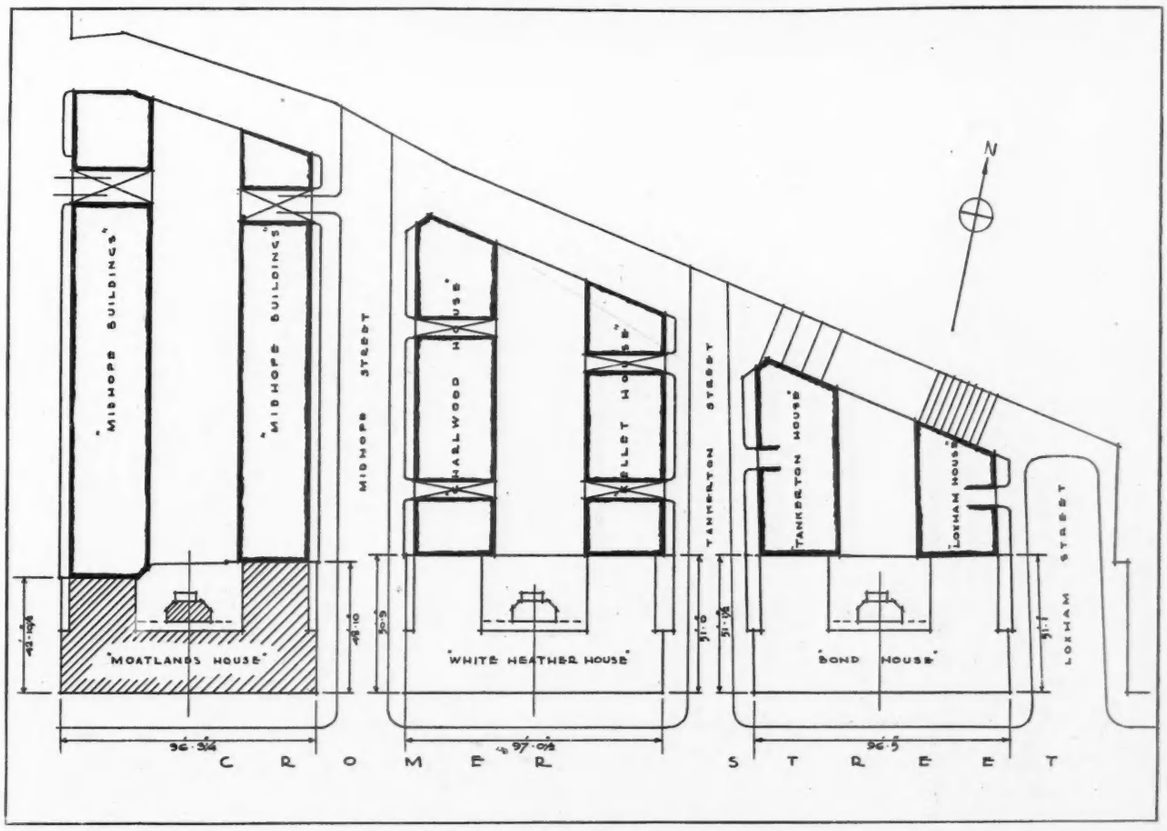
DETAIL OF ENTRANCE TO "WHITE HEATHER HOUSE."

MR. ARTHUR WM. KENYON, F.R.I.B.A., ARCHITECT.



PLANS.

GENERAL VIEW OF THE THREE BLOCKS.



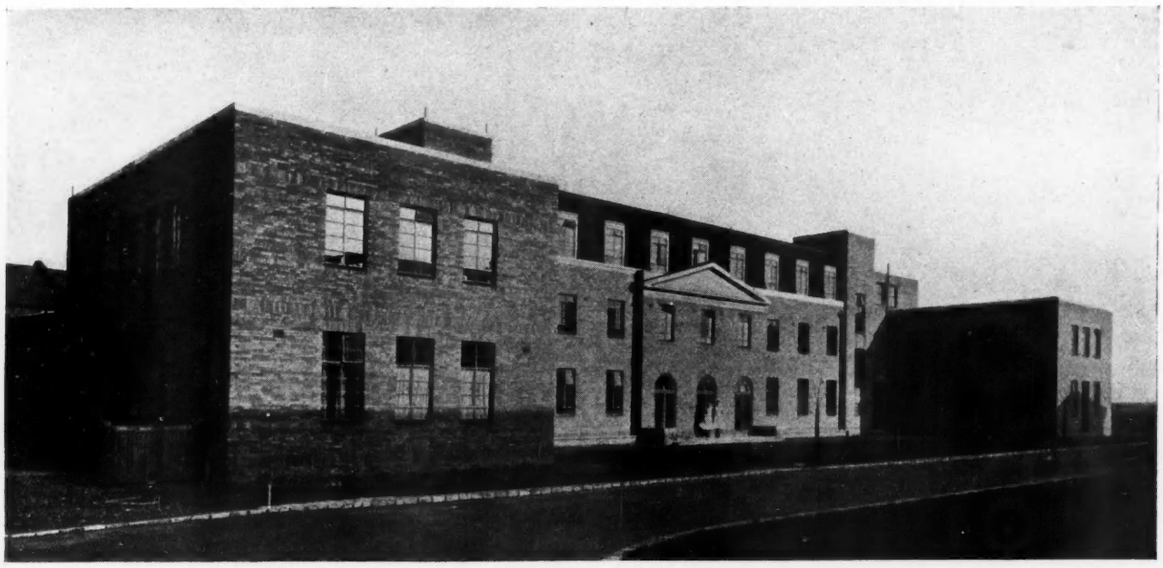
THE LAYOUT PLAN.

THREE BLOCKS OF FLATS, CROMER STREET, W.C.

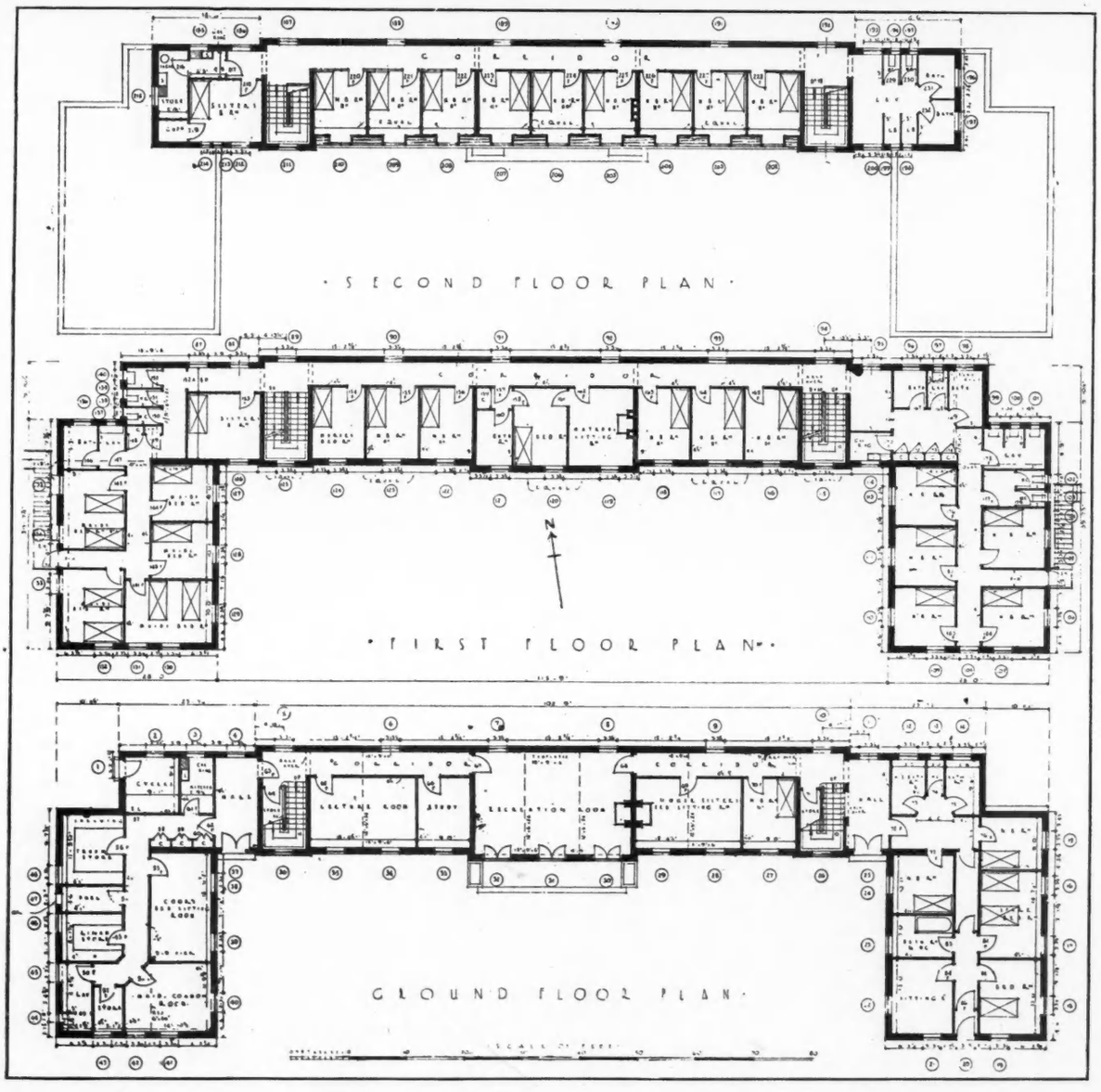
MR. ARTHUR WM. KENYON, F.R.I.B.A., ARCHITECT.

THE NEW ALBERT DOCK HOSPITAL, WEST HAM.

MR. STANLEY HAMP, F.R.I.B.A. (COLLCUTT AND HAMP), ARCHITECT.



THE NURSES' HOME.



THE NEW ALBERT DOCK HOSPITAL, WEST HAM.

THE MAIN ENTRANCE TO THE HOSPITAL.

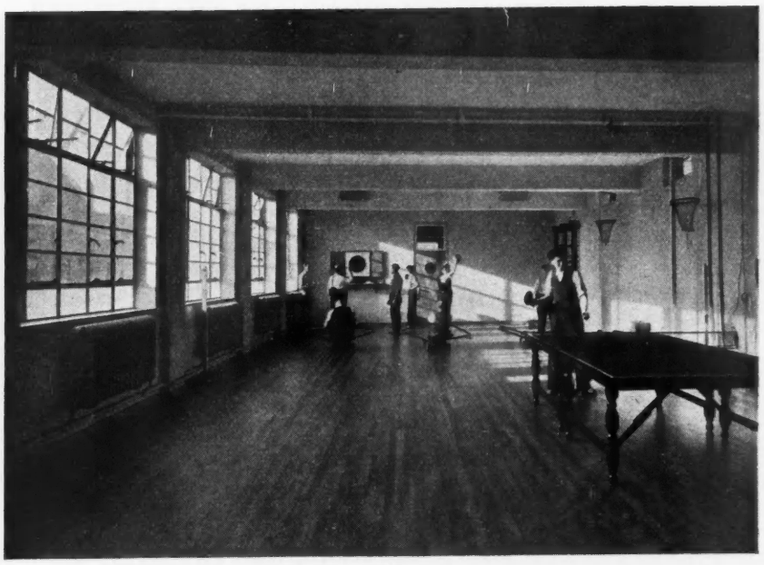
When the old buildings of the Albert Dock Hospital were condemned as being unsafe, the Seamen's Hospital Society decided to rebuild. The new premises, illustrated in these pages, consist of four separate units—hospital, nurses' home, mortuary and boiler house. Brickwork with stone dressings are the external materials, the roofs, where pitched, being pantiled.

MR. STANLEY HAMP, F.R.I.B.A. (COLLCUTT AND HAMP), ARCHITECT.

THE NEW ALBERT DOCK HOSPITAL, WEST HAM.

THE new Albert Dock Hospital has been erected by the Seamen's Hospital Society to replace the old Albert Dock Hospital, condemned as unsafe. The building is situated in the Borough of West Ham, and serves a very large area in Dockland. The scheme consists of four separate units, the hospital, nurses' home, mortuary and boiler house. Accommodation is provided for 55 patients, 36 nurses and maids and three medical staff.

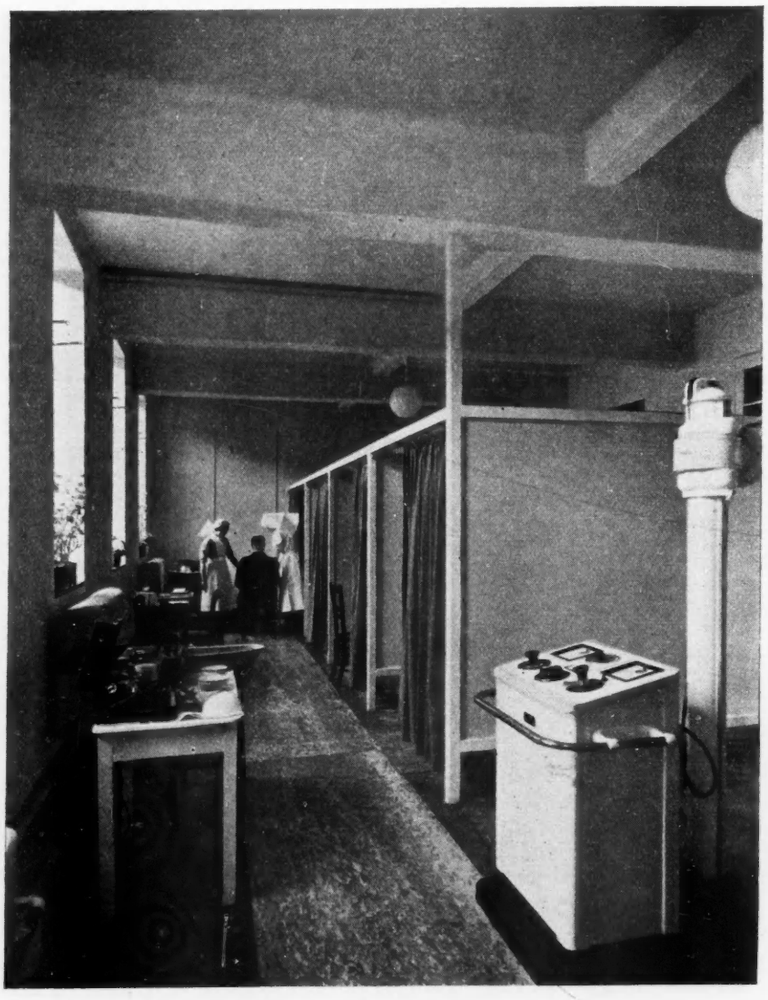
The accommodation and the arrangement of the respective departments is shown on the accompanying plans. A particular feature of the scheme is the provision of a fracture clinic, the first complete unit of its kind to be established in this country. This clinic makes special provision for the rehabilitation of patients suffering from various types of fracture by means of gymnastic and other accepted forms of treatment. The gymnasium is fully equipped with apparatus (shown in our illustration) and the gymnastic treatment is carefully controlled. Special consideration has been given to the provision of adequate operating theatre accommodation, two such units being included, with joint sterilising facilities.



GYMNASIUM IN FRACTURE CLINIC.

The buildings are of fire-resisting construction throughout. Owing to the nature of the ground, it was necessary to insert piled foundations with a reinforced raft forming the ground floor. The elevations are finished in Northwick bricks with stone dressings, with a red pantile roof, the flats being finished in asphalt, or, where available for use by patients, in "Paropa" flooring.

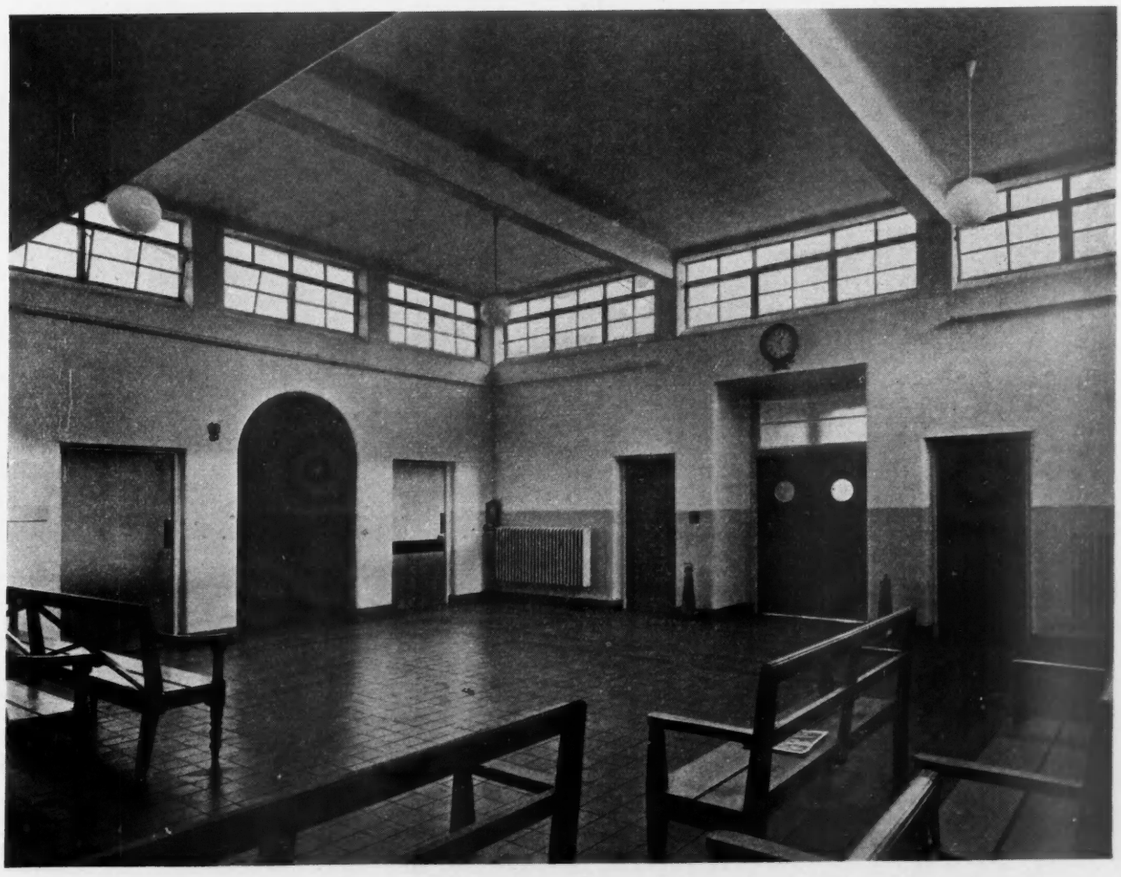
The general contractors were Messrs. Boyd and Murley, Ltd., of Reading. Sub-contractors were: Dawnays, Ltd., steelwork; Helical Bar Flooring Co., hollow-tile floors; Northwick Brick Co., bricks; Langley (London), Ltd., roof tiling; Frazzi, Ltd., "Paropa" roofing; Young, Austen and Young, Ltd., boiler plant, heating, hot water and ventilation; Dovetails, Ltd., flush doors; Yannedis, Ltd., ironmongery; Camden Tile Co., wall tiling; Art Pavements, Ltd., terrazzo; Dent and Hellyer, Ltd., sanitary fittings; Bective Electrical Co., electrical work; Adrian Stokes, Ltd., metalwork; Medical Supply Association, sterilisers; Hollis Bros., Ltd., wood block floors; Wood, Hempel and Co., paint and distemper; General Asphalte Co., asphalt; R. C. Cutting, lightning conductors; Crittall Manufacturing Co., Ltd., metal casements; J. A. King and Co., Ltd., concrete roof lights; Mellowes and Co., Ltd., metal roof lights; Chimneys, Ltd., boilerhouse stack; Troughton and Young, Ltd., electric light fittings; Express Lift Co., lifts; Spencer, Heath and George, gymnastic apparatus; Bath Stone Firms, stonework; Franki Piling Co., piling; and Benham and Sons, Ltd., kitchen fittings.



Left : THE MASSAGE DEPARTMENT.

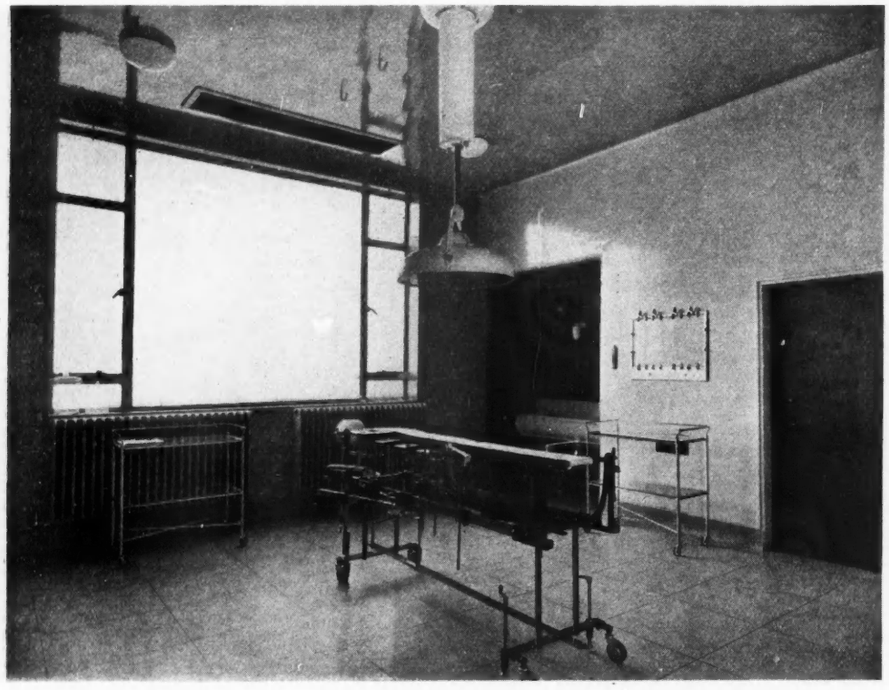
MR. STANLEY HAMP, F.R.I.B.A. (COLLCUTT AND HAMP), ARCHITECT

THE MAIN ENTRANCE HALL.

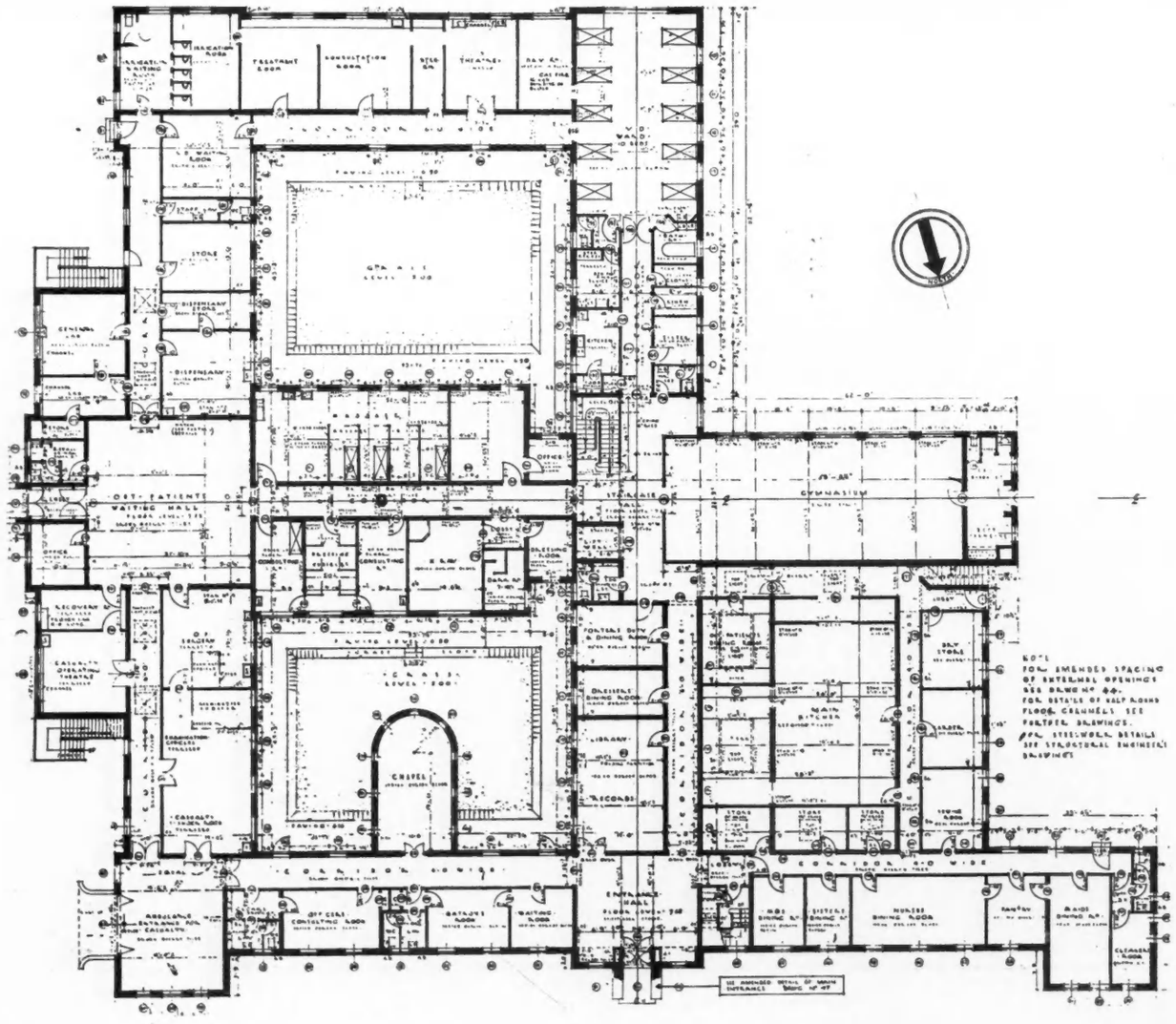


OUT-PATIENTS' WAITING HALL.

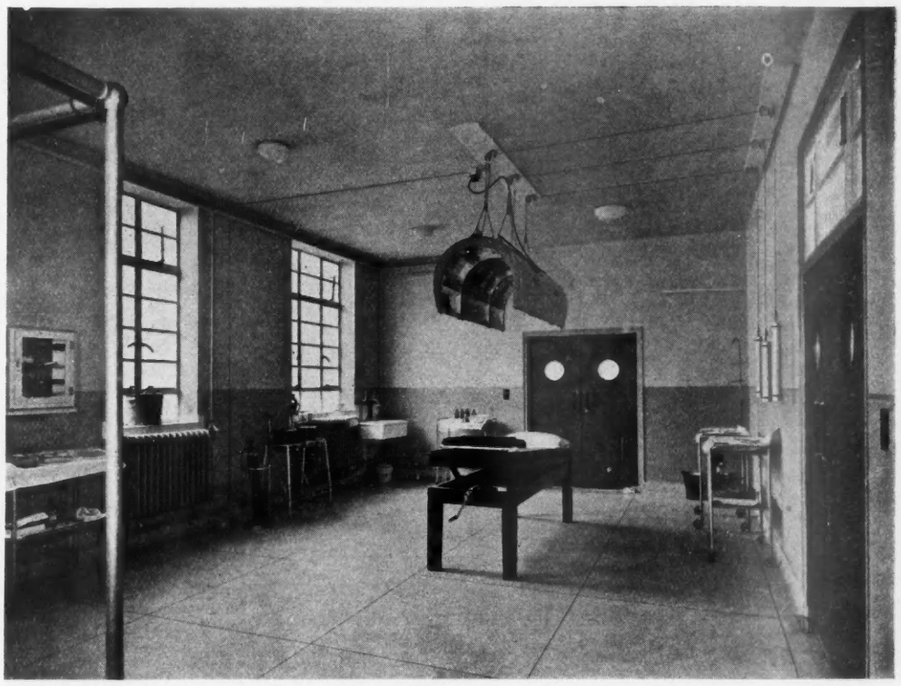
NEW ALBERT DOCK HOSPITAL, FOR SEAMEN'S HOSPITAL SOCIETY.



Left : THE PLASTER THEATRE.
Below : GROUND-FLOOR PLAN.

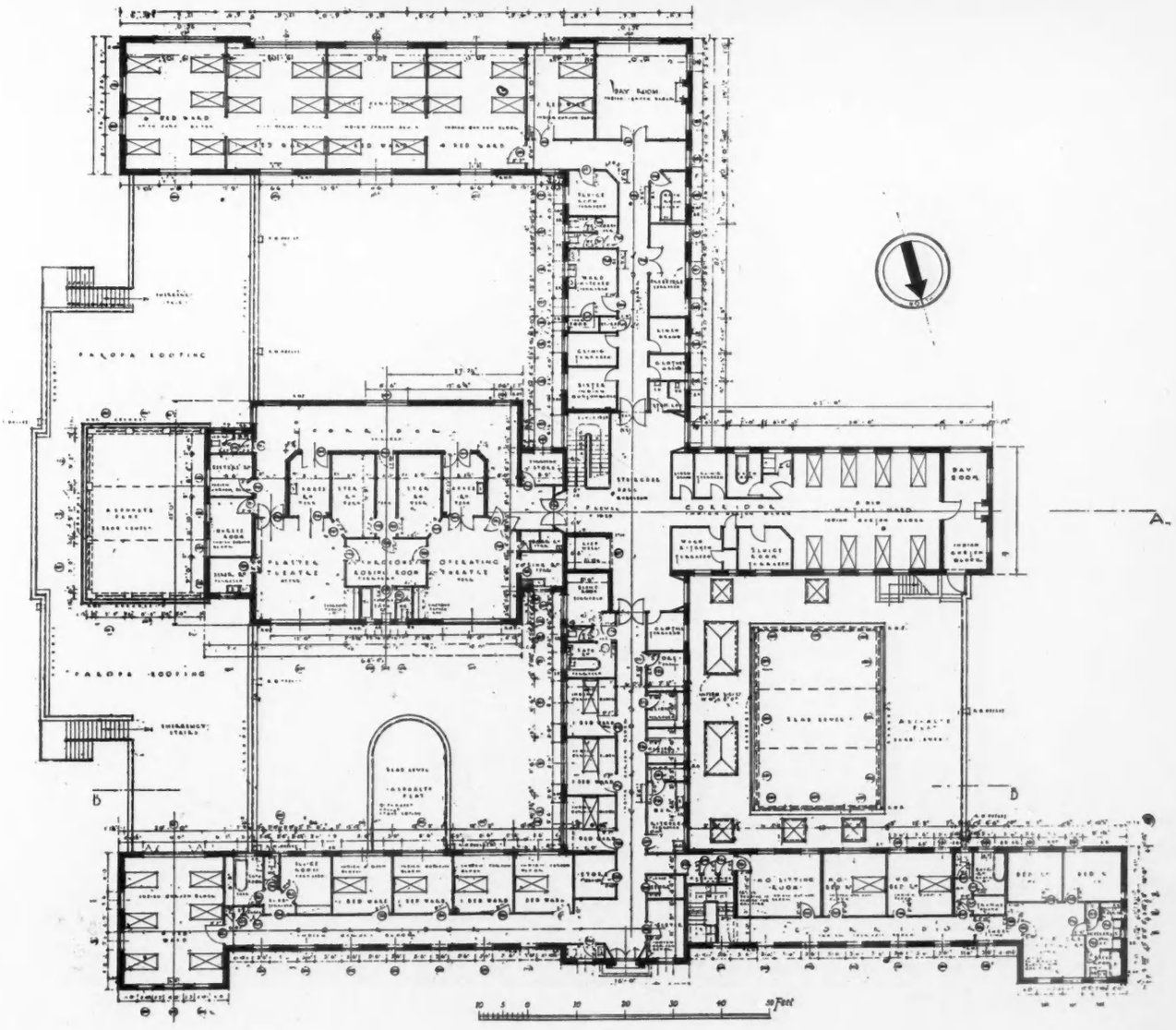


MR. STANLEY HAMP, F.R.I.B.A. (COLLCUTT AND HAMP), ARCHITECT.



Right : CASUALTY SHOCK ROOM.

Below : FIRST-FLOOR PLAN.



FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.

THE ENTRANCE FRONT, FROM PINE STREET.

By the erection of this new building, all the borough health services are centralised in the same premises, easily accessible from all parts.

Sub-division of Services.—The different types of services have been distributed in the semi-basement, ground and first floors of the building. The whole of the ground floor has been given over to the patients attending the centre, with their entrance through the main front open court. The position of the clinics on this floor obviates the necessity for stair-climbing by persons seeking treatment. The clinics consist of municipal chest clinic and X-ray department, foot clinic, dental clinic, women's clinic and electrical treatment clinic. The first floor contains all the administrative offices, lecture theatre, staff rooms, caretaker's flat and reception house, and has a large roof terrace for the use of the staff.

The semi-basement of the centre contains all the unclean services such as the cleansing station, disinfecting station and mortuary (with entirely separate entrances from the rear of the building). Also boiler room with its oil fuel store, electrical intake rooms and archives.

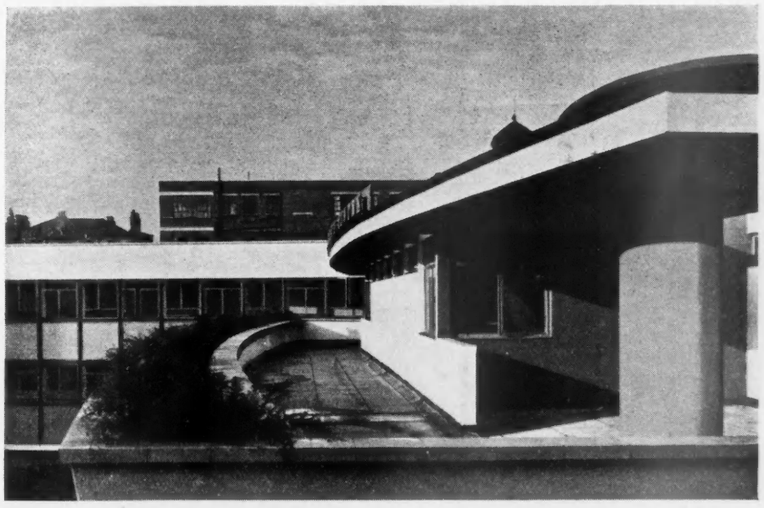
Circulation.—The public circulate to the various clinics and offices from a large entrance hall, which has a continuous wall of glass bricks giving a soft diffused light and cheerful atmosphere. Mural decorations have been painted on the walls of the entrance hall for purposes of propaganda and to give colour and interest to the patients waiting for treatment. Individual chairs and tables give an informal homely atmosphere.

DETAIL VIEW OF MAIN ENTRANCE.

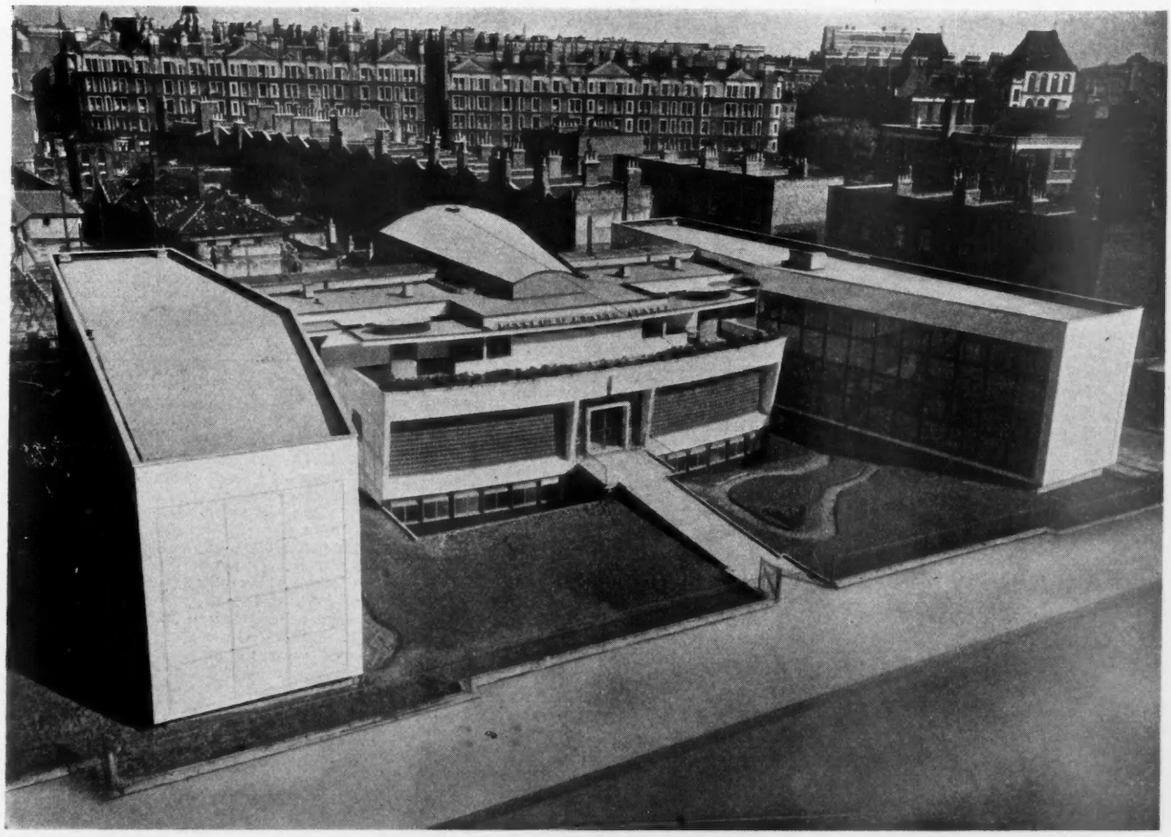
CHARACTERISTICS OF THE DESIGN.—An important feature of the design is its flexibility, necessary in view of the fact that the demands upon the various clinics in the wings may vary considerably from time to time. Every effort has been made to provide for such alterations in advance.

CONSTRUCTION.—In the side wings the constructional system gives great flexibility for alterations. It was considered very important that in the floor and ceiling areas no beams or columns should be in the way of partitions. Thick double concrete floor slabs, with hollow-tile in-filling, span across the wing between the channel-shaped concrete beams which form the service ducts. This gives undisturbed ceiling and floor space. The channel-shaped beams are supported one over the other by a series of regularly spaced statically-hinged mullions taking the vertical stresses. These window mullions are capable of taking light partitions in any of the possible positions required. The end solid walls of the wings take up the remaining stresses. This constructional system was found, after much research, to give the greatest possible freedom in the internal distribution of the partitions (see diagram A).

ELECTRICAL.—The requirements for possible future alterations in planning meant that the flexibility of the electric wiring system had to be taken into consideration. The system evolved makes the altering or provision of additional points a very simple procedure. Internal and external telephones, bells, power and light cables, have been taken in a metal skirting duct with a removable cover plate, so that further points can be provided at any time wherever required. The disposition of desks, furniture, equipment, etc., has been considered in relation to the running of short flexes to this skirting. The ceiling points are fixed to a built-in metal duct with a removable underplate in order to facilitate changes in the positions of light points for the rooms, if the positions of partitions are altered later. Conduits in the upper portion of a long row of cupboards, which run as a spinal sound insulating wall between the rooms and the public corridors, give connection between the ceiling metal duct and switches by the doors wherever they are required. The current to each floor is supplied through easily accessible vertical ducts rising through the building from the electrical intake room in

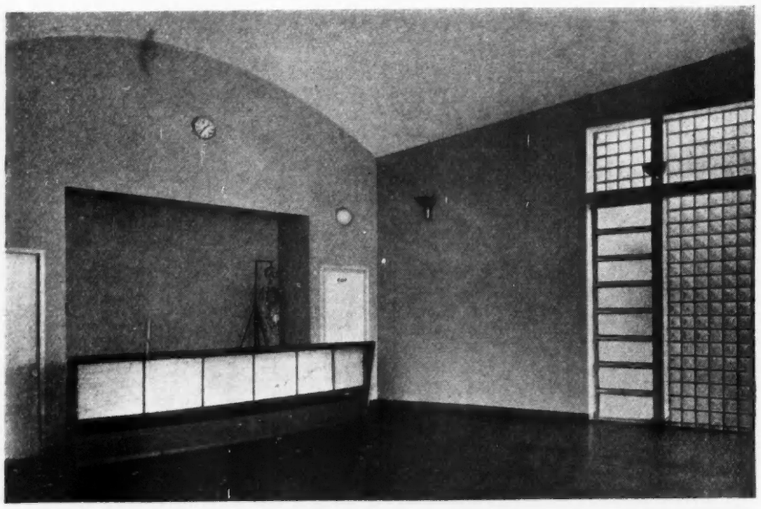


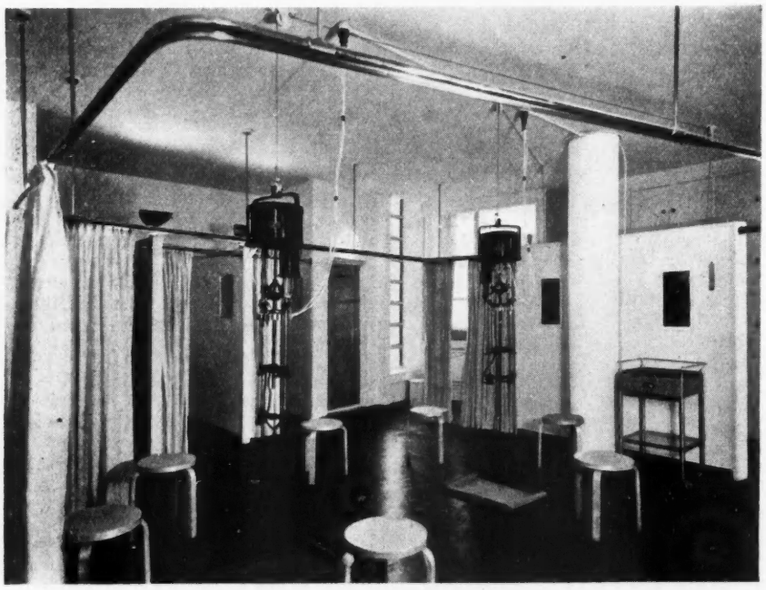
THE ROOF TERRACE AT FIRST FLOOR.

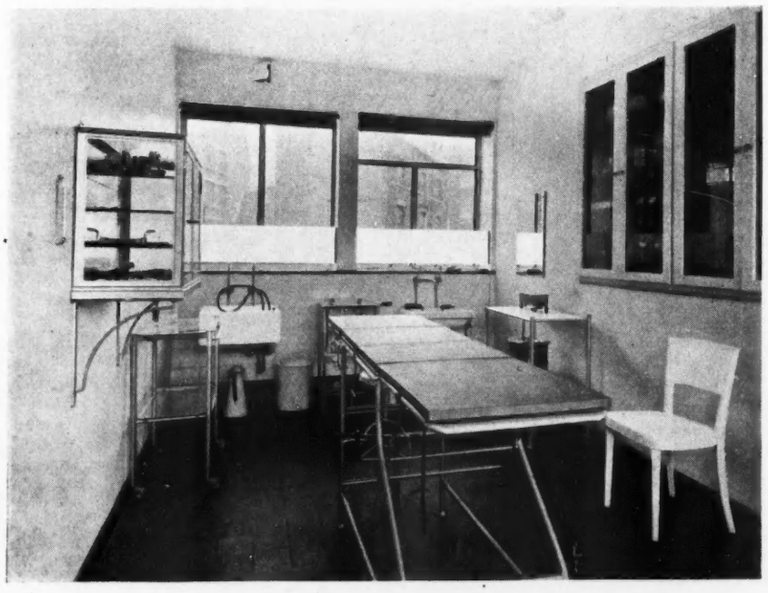


GENERAL VIEW, LOOKING ACROSS PINE STREET

FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.







Top : LECTURE HALL. Centre : ELECTRICAL TREATMENT CLINIC.
Below : SURGERY IN MUNICIPAL CHEST CLINIC.

FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.

the basement. The doors for access to these electrical ducts have been faced in cork and are used for the display of propaganda posters. (See diagram B.)

PLUMBING. — New methods of treatment may require alterations to the plumbing system. The special external channel-shaped ducts carry all the service pipes, taking into account their natural fall to the vertical down pipes at each end of the wing. Access to the ducts is from external removable panels of insulating glass, and holes are left in the concrete wall for future tapping through to the service pipes if additional sinks or basins are required, these holes being temporarily filled in with breeze and plastered over. (See diagram C.)

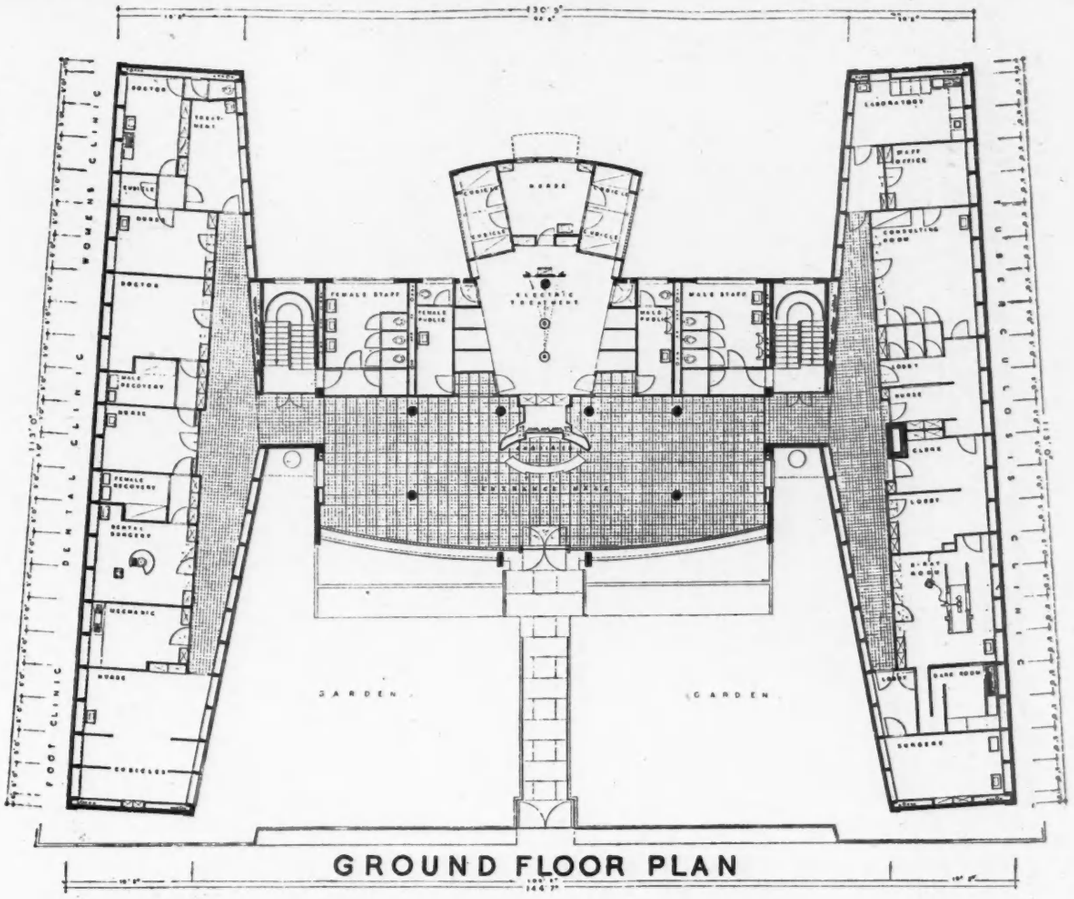
HEATING. — A concealed radiant panel heating system has been installed in the ceilings, controlled from access panels provided over the windows to the insulated flow and return pipes in the external channel-shaped service ducts. (See diagram D.)

FINISHES.—The whole of the external appearance of the building has been given a light and cheerful character with special attention to the provision of easy cleaning surfaces, very necessary in the sooty atmosphere by which the building is surrounded. All concrete surfaces have been tiled with cream egg-shell finish frost-proof tiles, and special grooves were formed in the shuttering of the reinforced concrete to provide a strong key for the tile bedding.

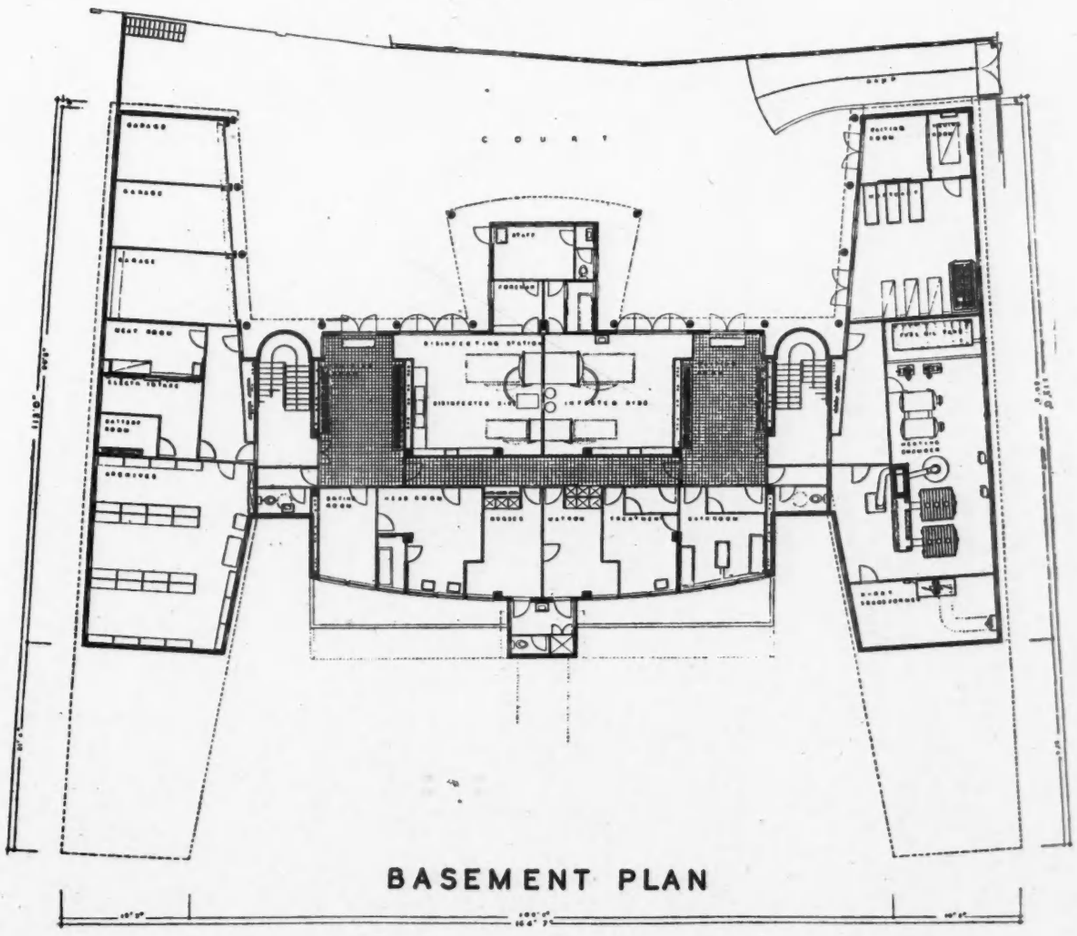
A teak framing is supplied externally over the concrete mullions and service ducts, this frame serving as a support to the steel window frames and the removable steel frames for the insulating glass panels which cover the ducts. This teak framing is fixed to the concrete mullions by lugs inserted in the concrete during construction. Alternating top and bottom ventilation to the windows is provided, which introduces a variety of rhythm and scale to the elevations within the rigid framework of the teak framing.

A recessed plinth defines and separates clearly the elevational treatment of the building from the surrounding garden layout.

The general contractors were Messrs. Patman and Fotheringham, Ltd. Main sub-contractors were : J. L. Kier and Co., Ltd., reinforced concrete structure; G. N. Haden and Sons, Ltd., heating, plumbing and electrical services; Carter and Co., external tiling; Carraratile, Ltd., terrazzo floor finishes; Inlaid Ruboleum Tile Co., Ltd., linoleum floor finishes; L. E. Vigar and Son, Ltd., joinery; H. Mills and Sons, joinery; Ramsden, internal tiling; Permanite, Ltd., roof finishes; Thermolux Glass Co., Ltd., "Thermolux" glass; Davis, Bennett and Co., Ltd., sanitary fittings; D. Sebel and Co., Ltd., internal metal work; Williams and Williams, windows; Hill and Smith, Ltd., railings; Stic B Paint Sales, Ltd., external paint finish; Granwood Flooring Co., Ltd., lecture hall floor; Jaconello, Ltd., marble finishes; and Joseph Sankey and Co., Ltd., metal door frames.

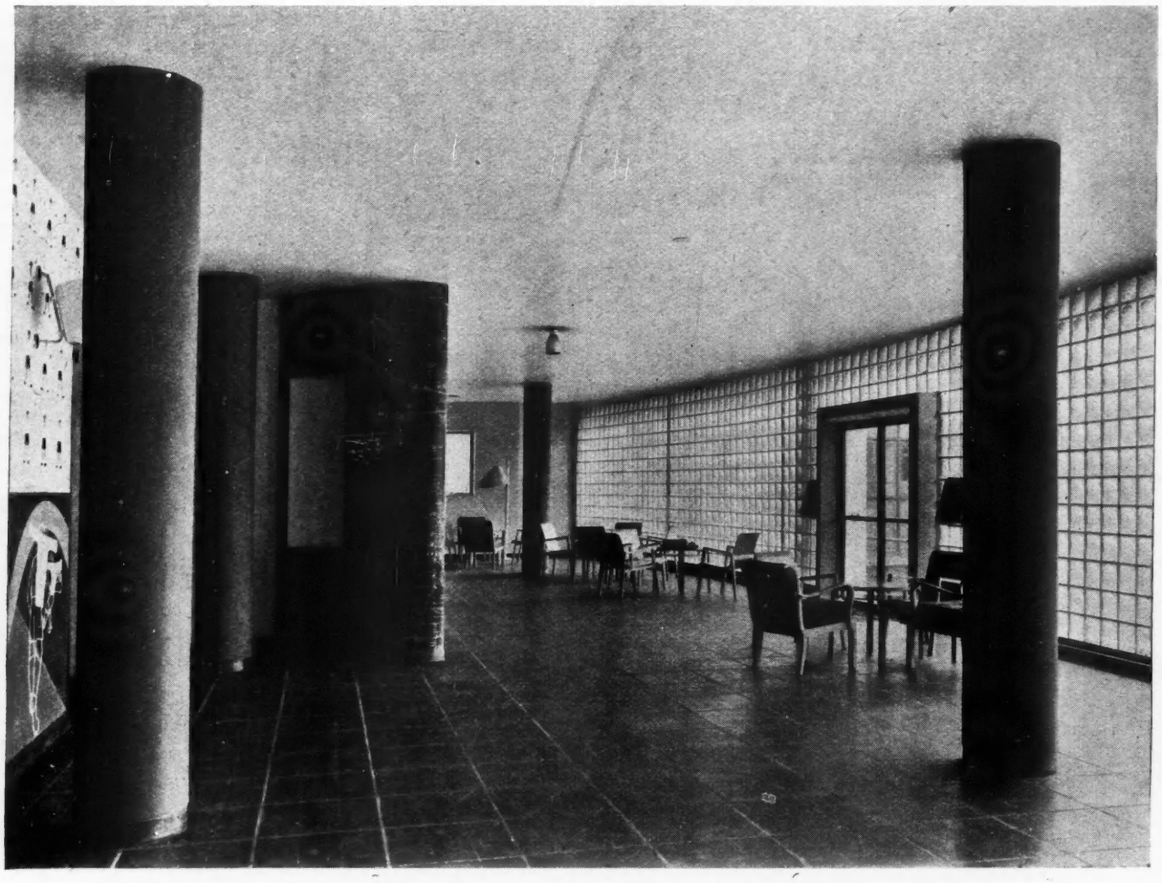


GROUND FLOOR PLAN

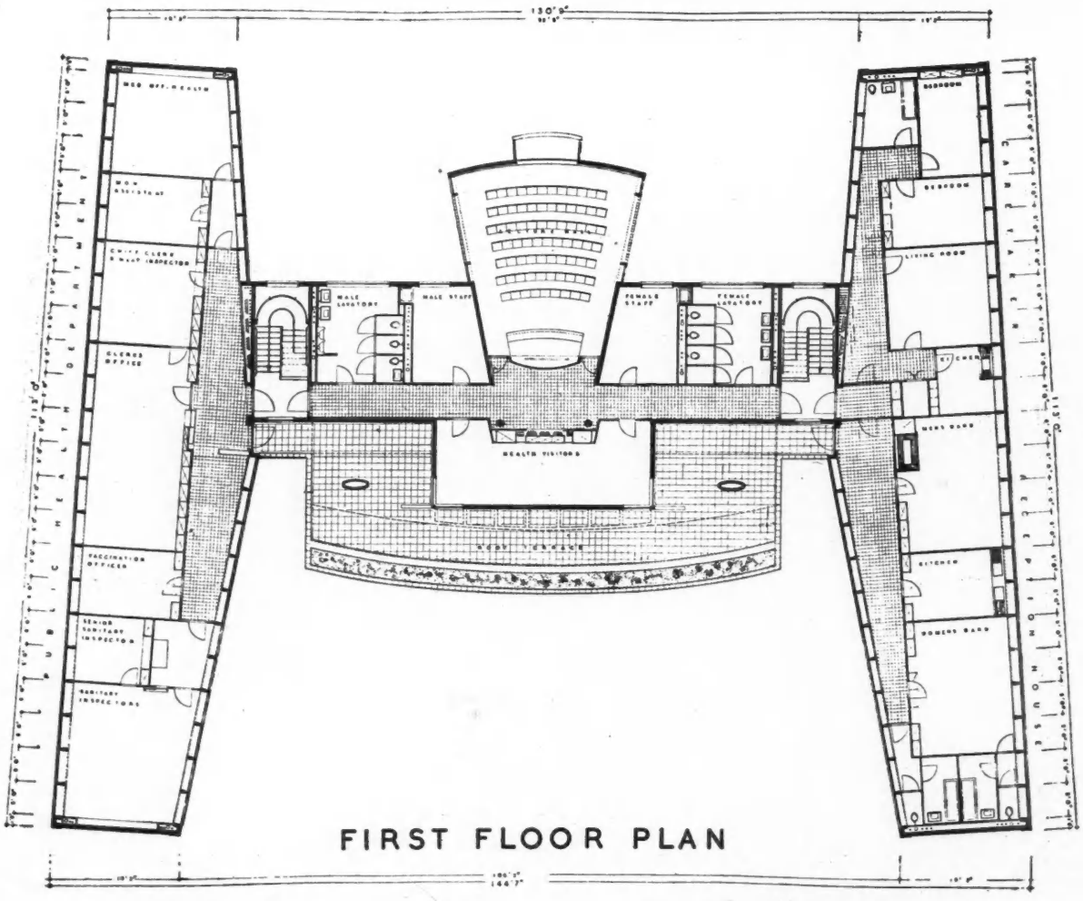


BASEMENT PLAN

FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.

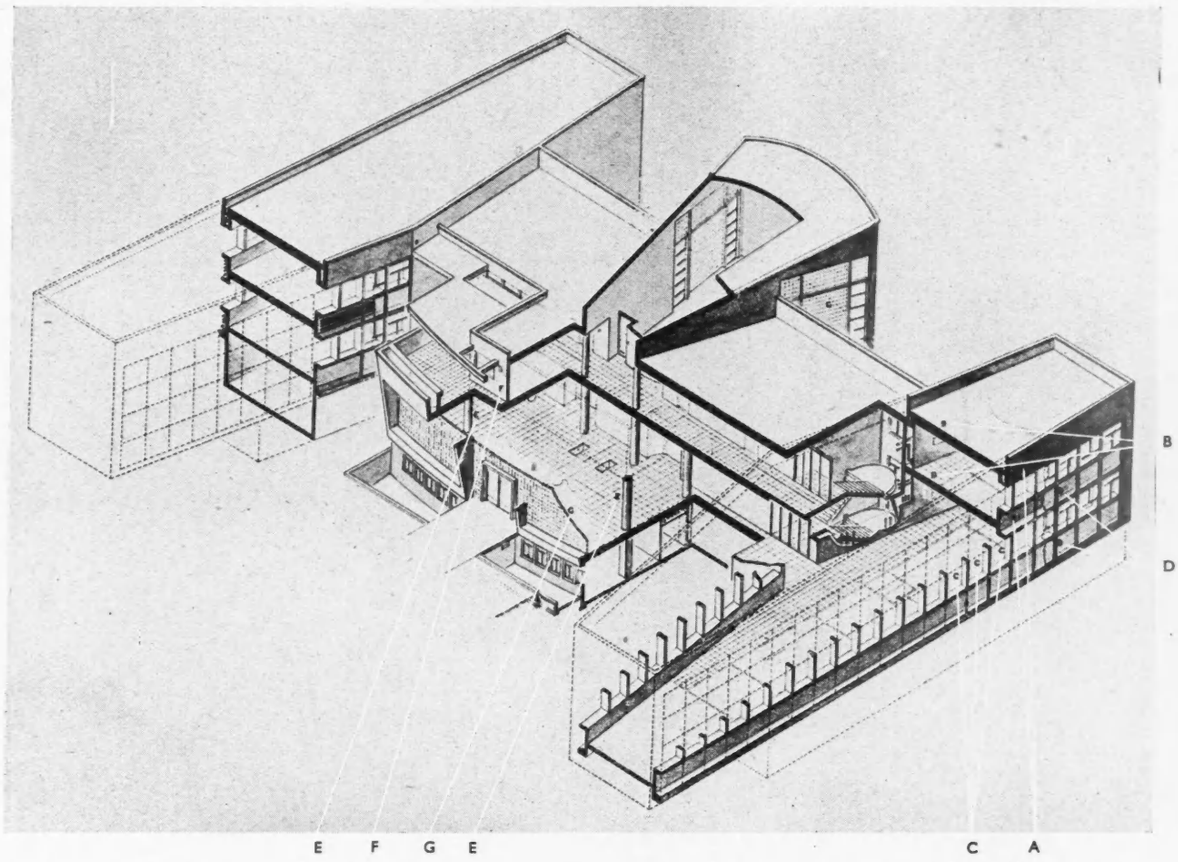


THE MAIN ENTRANCE AND WAITING HALL.

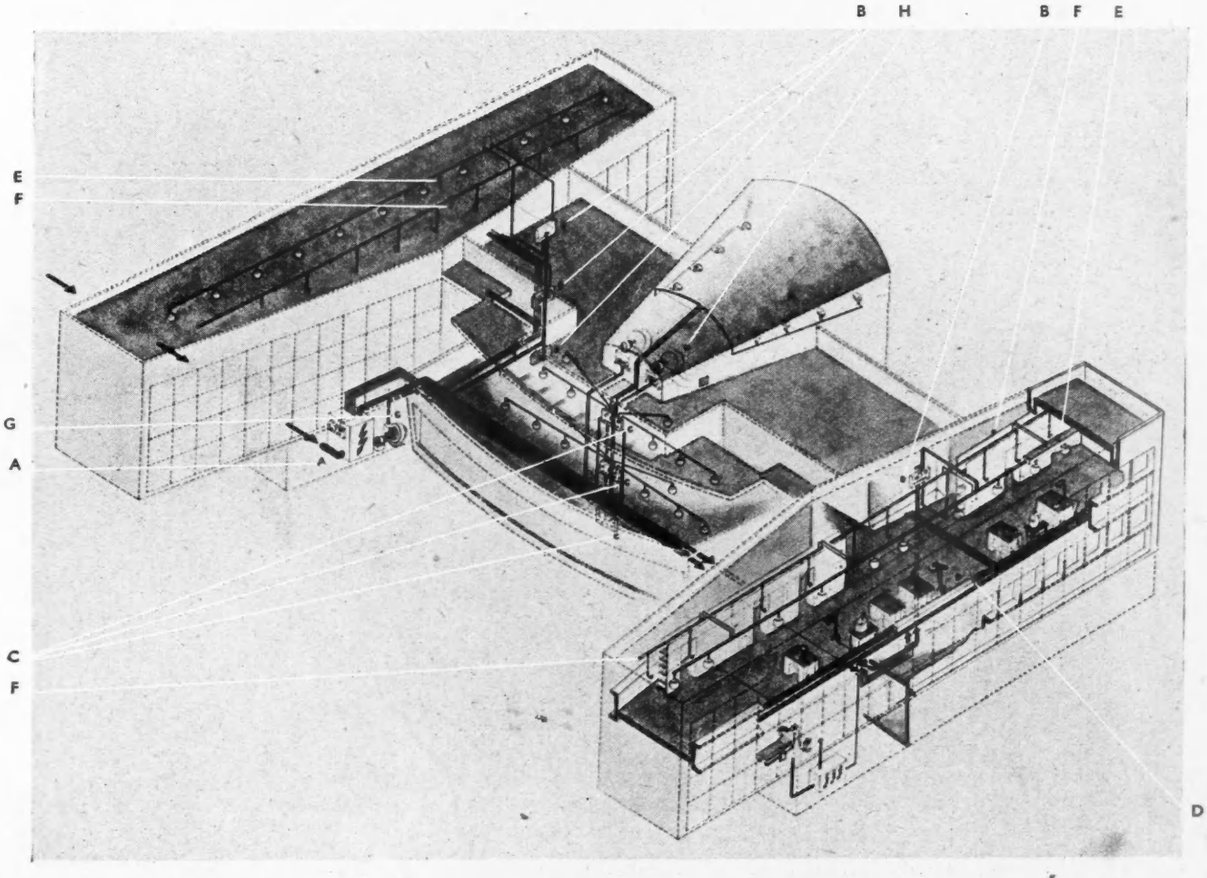


FIRST FLOOR PLAN

FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.

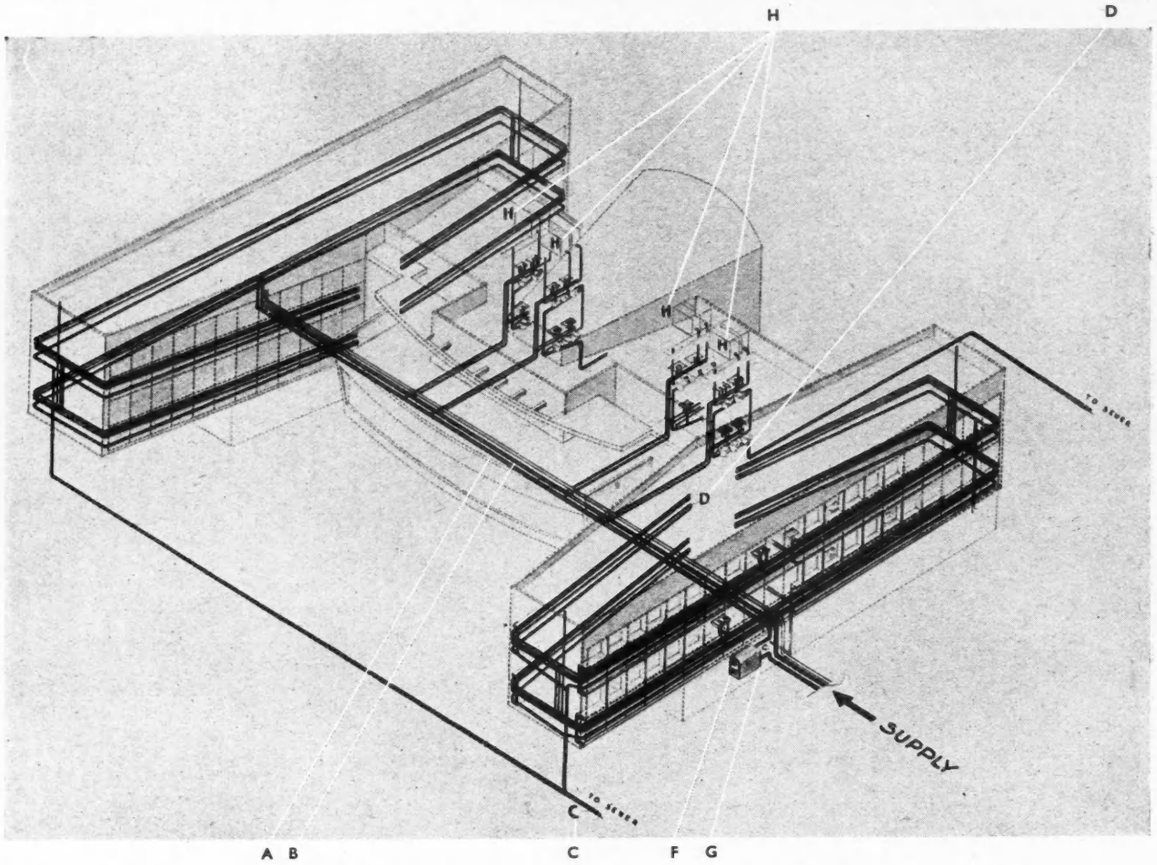


CONSTRUCTION SYSTEM (Diagram A). A—R.c. beams to carry floors made in channel form to act as pipe ducts. B—Thick r.c. floor slabs spanning between beams A-A with no intermediate support. C—"Vertical Strut" r.c. stanchions (statically "hinged") supporting beams A-A. D—Teak framework covering stanchion faces and beam edges, acting as fixing for steel windows and duct covers. E—Circular r.c. columns, supporting wall beam "F." F—R.c. wall beam carrying slab over entrance hall. G—Glass brick wall.

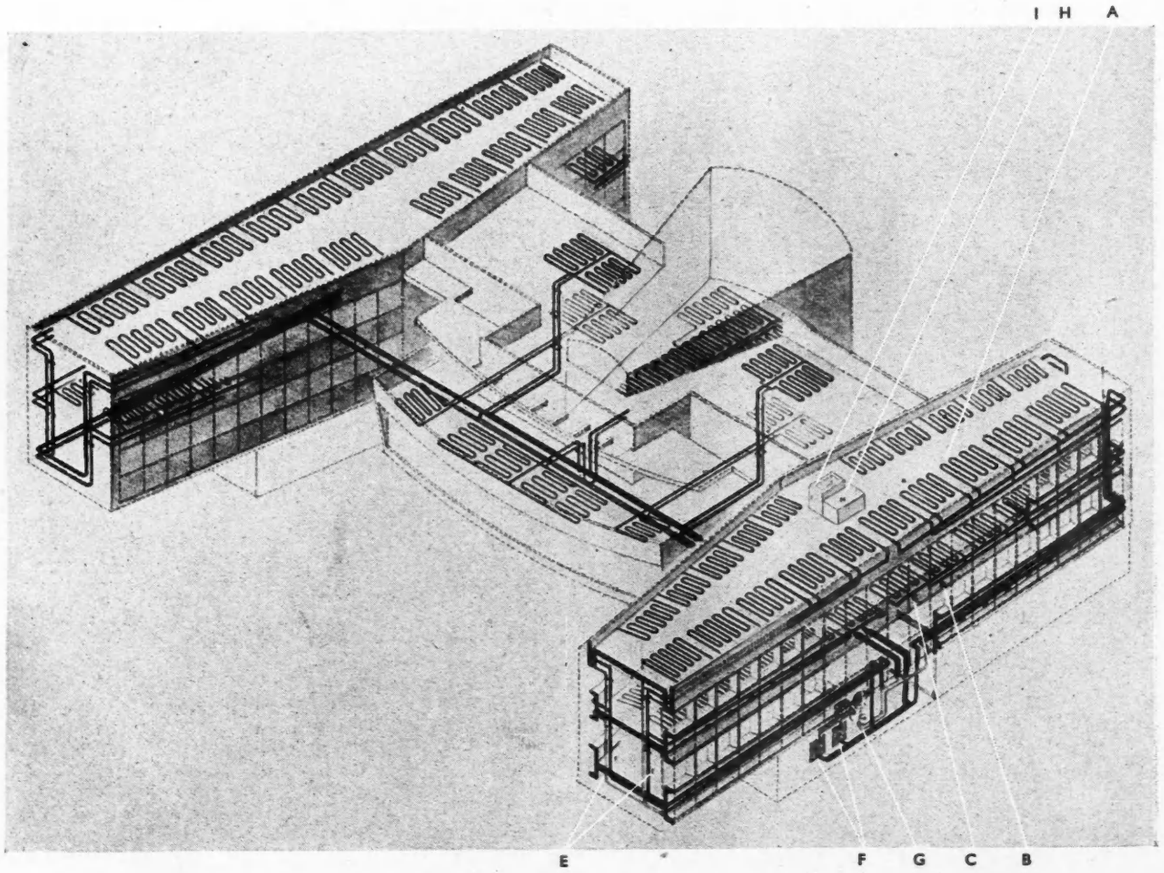


ELECTRICAL SYSTEM (Diagram B). A—Intake chamber. B—Distribution boards to wings. C—Distribution boards to centre block D—Skirting ducts for wiring to telephones, bells, etc., and for clinical apparatus. E—Ceiling ducts for lighting points. F—Ducts in cupboard heads for wiring to switches. G—Emergency lighting to fire exits. H—Extract fans.

FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.



PLUMBING SYSTEM (Diagram C). A—Cold water supply pipe. B—Hot water supply pipe. C—Waste pipe to sewer. D—Anti-syphon pipe. F—Hot water boiler. G—Circulating pump. H—Cold waterstorage tanks.



HEATING SYSTEM (Diagram D). A—Heating coils embedded in ceiling. B—Flow pipes to coils. C—Return pipes from coils. E—Risers and returns main distribution pipes. F—Boilers. G—Circulating pump. H—Expansion tank. I—Boiler flue.

FINSBURY HEALTH CENTRE. MESSRS. TECTON, ARCHITECTS.

NEW ADDITIONS TO THE MANCHESTER ROYAL EYE HOSPITAL.

Recent additions to the Manchester Royal Eye Hospital comprise an out-patients' department, with a nurses' and maids' home over. The main front is in Nelson-street, and the entrance, shown above, opens on to a large waiting hall, with record and receiving offices on either side and a refreshment buffet at the end. Architecturally, the design depends for its effect on simple proportions, good brickwork and the bold recessing of the front. Strongly defined eaves and Italian tile roofs give it its particular character.

MESSRS. THOMAS WORTHINGTON & SONS, ARCHITECTS.

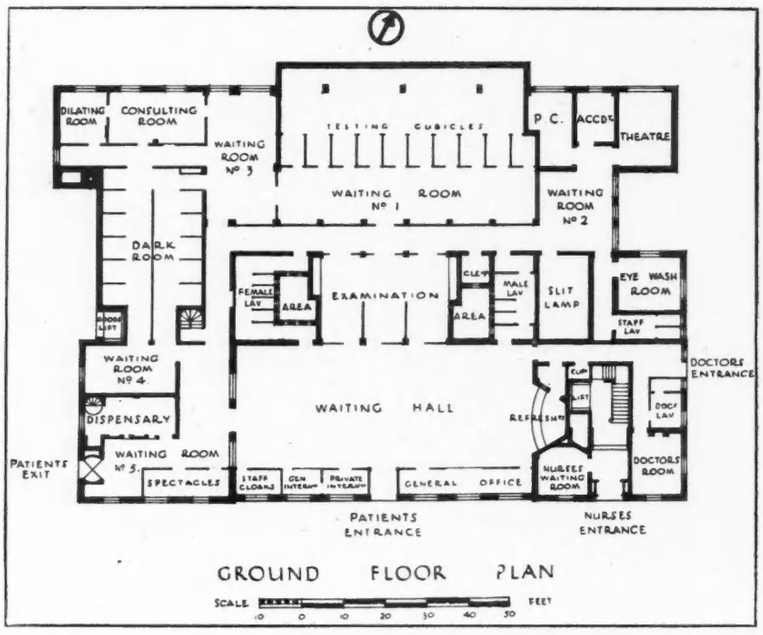
NEW ADDITIONS TO THE MANCHESTER ROYAL EYE HOSPITAL.

THE new buildings comprise an up-to-date out-patients' department and a nurses' and maids' home over.

OUT-PATIENTS' DEPARTMENT.—This is one of the busiest in England, and sometimes deals with 700 patients in a morning. It will be realised how vital it is to the neighbourhood that this building should be on the most modern lines, well lit and well ventilated, and designed to accommodate large numbers as quickly and smoothly as possible.

The entrance is in the centre of the Nelson-street façade, and opens on to a large waiting hall, with record and receiving offices on either side and a refreshment buffet at the end. Facing are three examination rooms from which the patients pass "sausage-machine-wise" to ten eye-washing cubicles, and on to consulting rooms, dark rooms, dispensary and spectacle room to the exit in the side street. The slit-lamp rooms, eye-washing rooms, theatre, accident and P.C. rooms are grouped in the eastern wing. The walls are tiled in a warm sunny tile from floor to ceiling. The waiting hall is effectively top-lit by means of circular lenses let in concrete, diminishing glare. The whole has been designed with a view to easy cleaning, and the ventilating and heating system is on the latest lines.

NURSES' HOME.—The entrance to the Nurses' Home is at the eastern end of the Nelson-street front. There are common-rooms to supplement others in the main hospital. There are bedrooms for nine sisters, 51 nurses and 34 maids, with an ample proportion of bathrooms. Each nurse's bedroom has a lavatory basin with hot and cold water, and a fixture cupboard fitting. The form of plan, recessed round the waiting hall, gives a fine roof garden and enables a maximum of bedrooms to face south, east and west, and to be set back from the street for quiet.

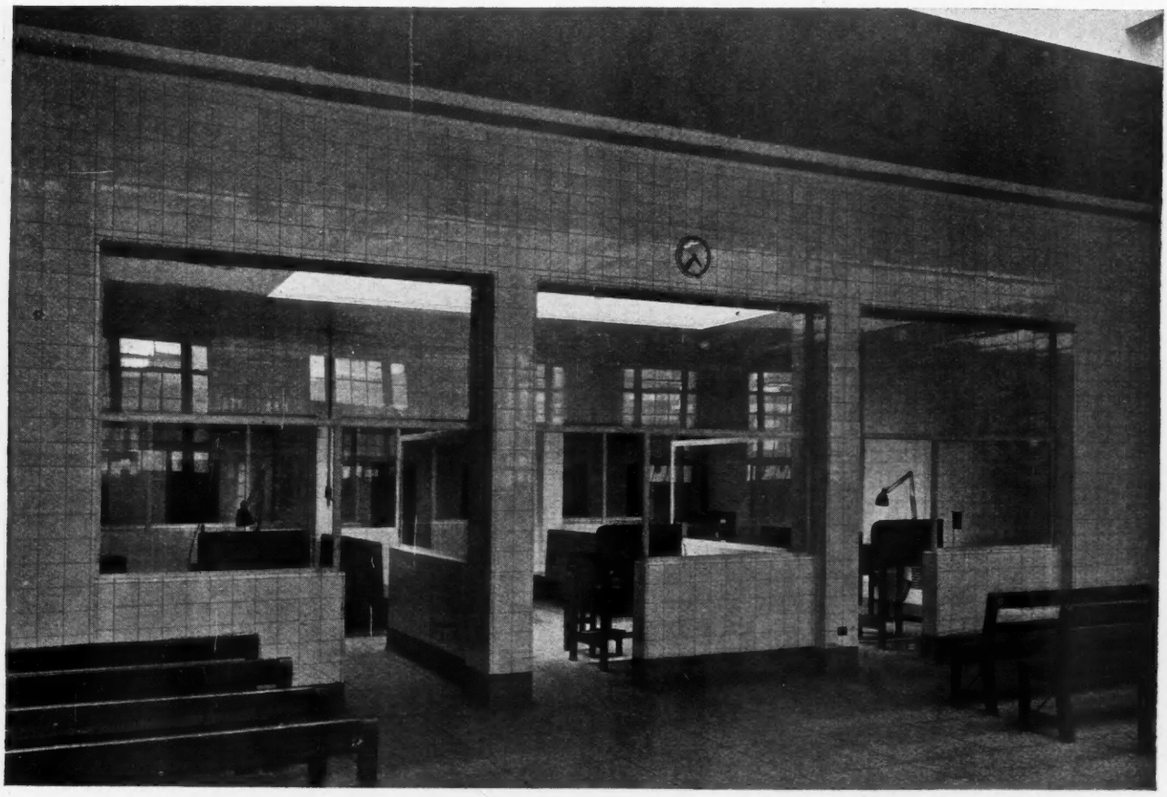


THE GROUND-FLOOR PLAN OF OUT-PATIENTS' DEPARTMENT

The consulting engineers (structural steelwork) were Messrs. C. S. Allott and Son, and the consulting engineers (electrical work) Messrs. Cramp and Frith.

General contractors were Messrs. L. Brown and Sons, Ltd., of Wilmslow.

Sub-contractors and suppliers were: Structural steelwork, Robinson and Kershaw; roof tiling, F. Brown and Son, Ltd.; plumbing, R. Heyworth and Co.; plastering and painting, A. and S. Wallace, Ltd.; electrical work, E. M. Evans and Son, Ltd.; heating and hot-water supply, Saunders and Taylor, Ltd.; ventilation, Standard and Pochin



THE OUT-PATIENTS' DEPARTMENT, SHOWING WAITING HALL AND EXAMINATION ROOMS.

THE EYE TESTING ROOM.

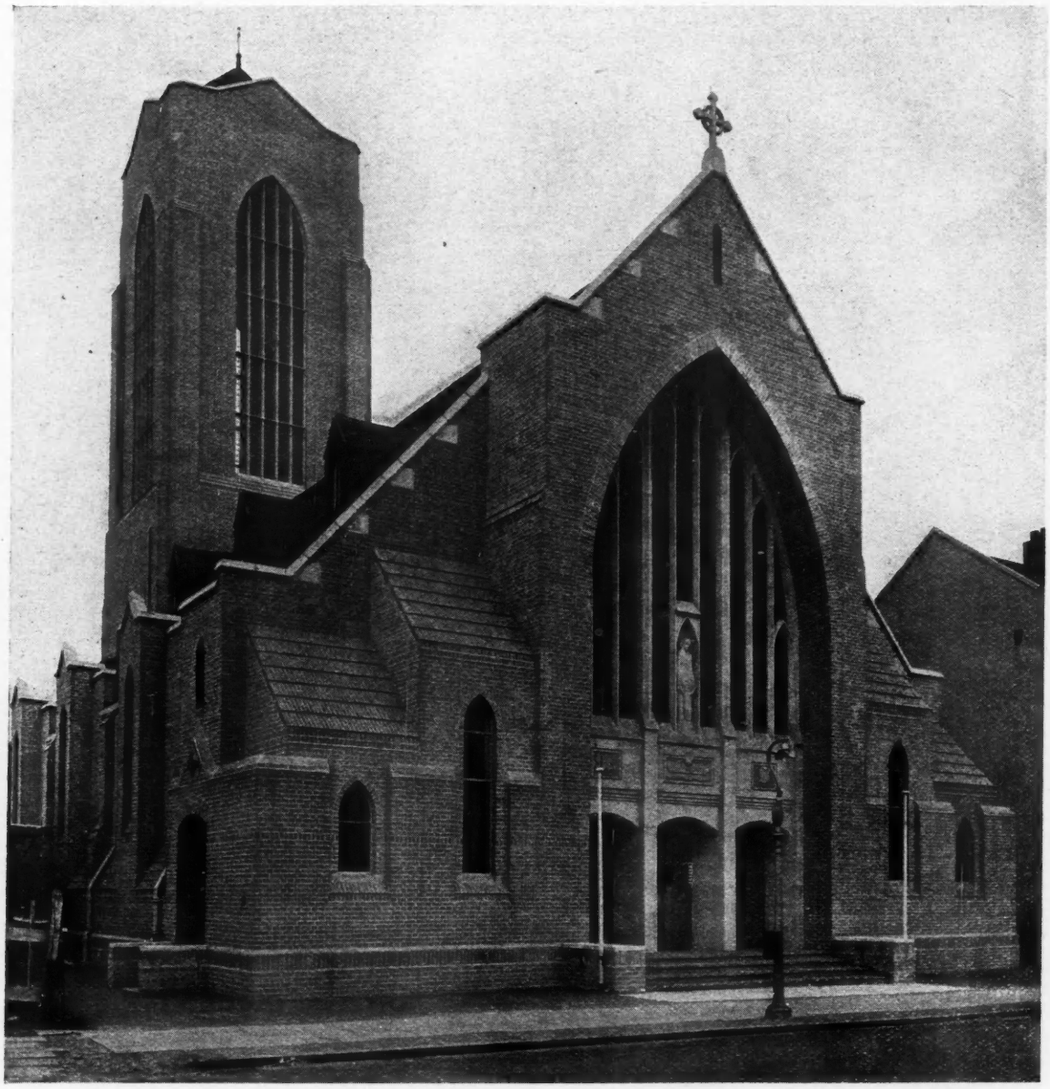
Bros., Ltd.; reinforced concrete, Concrete, Ltd.; roof lights, Lenscrete, Ltd.; lantern light, steel casements and screens, Henry Hope and Sons, Ltd.; lifts, Etchells, Congdon and Muir, Ltd.; lift enclosures, Brookes and Co.; balustrades, etc., Birmingham Guild, Ltd.; woodblock floors, A. M. Macdougall and Son; revolving door, T. B. Colman and Sons, Ltd.; circular iron staircase, Haywards, Ltd.; lean-to roof and glazing, W. H. Heywood and Co., Ltd.; pavement lights, etc., Luxfer, Ltd.; dark-room blinds, J. Avery and Co., Ltd.; lightning conductors, John Faulkner and Sons, Ltd.; road work, W. H. Worthington, Ltd.; roller shutters, Wm. Mallinson; flush doors, Laminated Wood Products, Ltd.; wall tiling and terrazzo, Conway and Co.; marble, J. and H. Patteson, Ltd.; stone cornice, Empire Stone Co., Ltd.; facing bricks, Buckley Junction Metallic Brick Co.; ironmongery, Laidlaw and Thomson, Ltd.; sanitary fittings, Morrison, Ingram and Co., Ltd.; waterproof rendering, W. H. Harries, Ltd.; movable partition, Educational Supply Association; and incinerators, J. Slater and Co., Ltd.

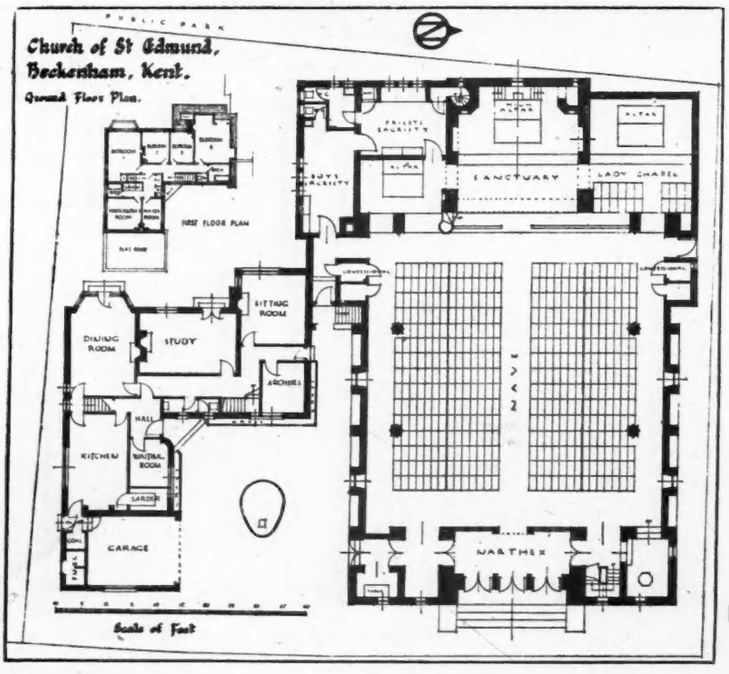
NEW ADDITIONS TO THE MANCHESTER ROYAL EYE HOSPITAL.

MESSRS. THOMAS WORTHINGTON AND SONS, ARCHITECTS.

THE MAIN CORRIDOR.

CHURCH OF ST. EDMUND, BECKENHAM, KENT.

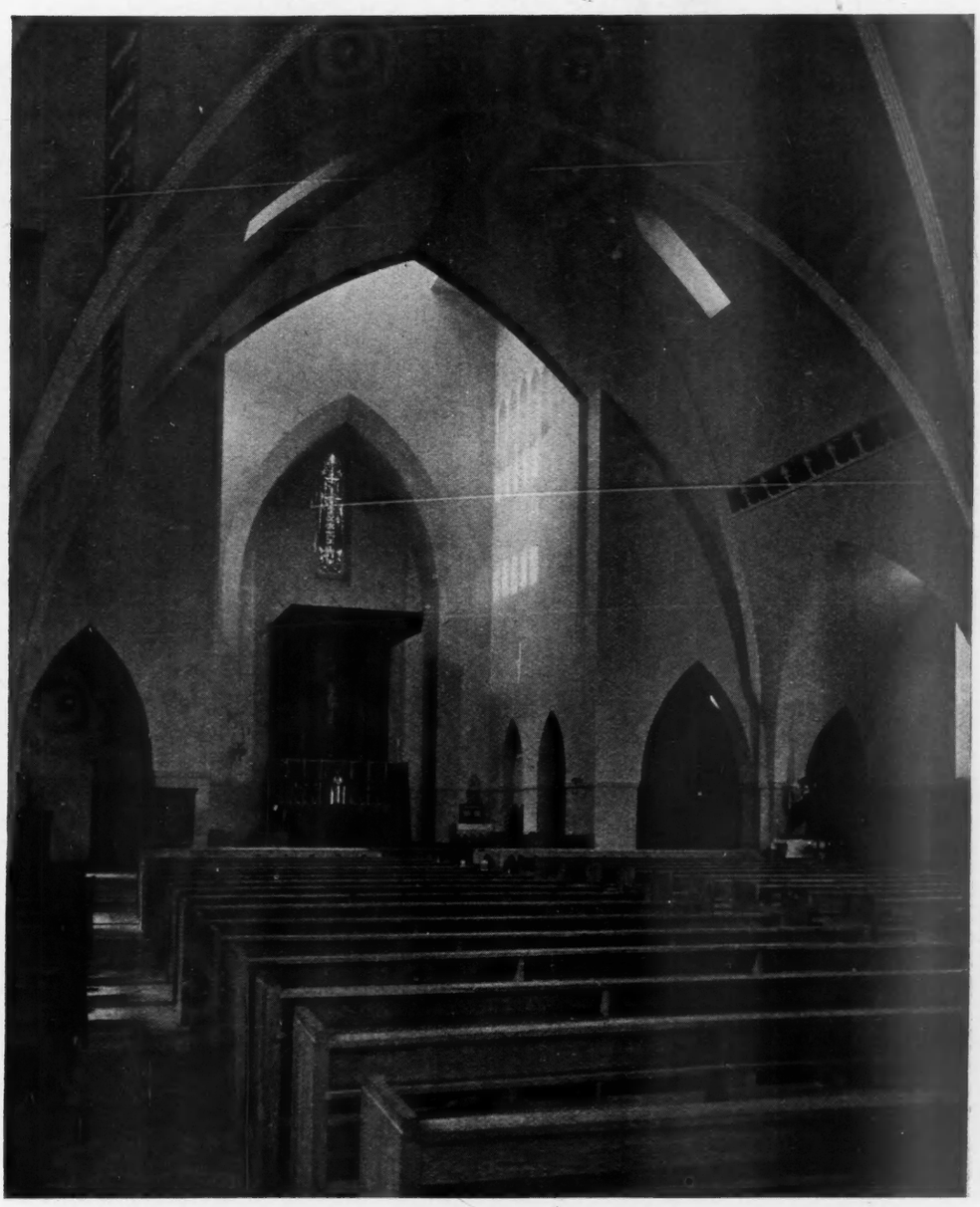




Above : A GENERAL VIEW.
Left : GROUND-FLOOR PLAN.

MR. J. O'HANLON HUGHES, F.R.I.B.A., ARCHITECT.

CHURCH OF ST. EDMUND, BECKENHAM, KENT.



INTERIOR VIEW, LOOKING TOWARDS HIGH ALTAR.

The nave seats 420 persons, with a clear view of the sanctuary. The altars have been formed in Portland stone, and these—as well as all fittings and furnishings—were designed by the architect, the altar hangings and furnishings for the High Altar having been arranged according to the design of Mr. Geoffrey Webb.

MR. J. O'HANLON HUGHES, F.R.I.B.A., ARCHITECT.

CHURCH OF ST. EDMUND, BECKENHAM, KENT.

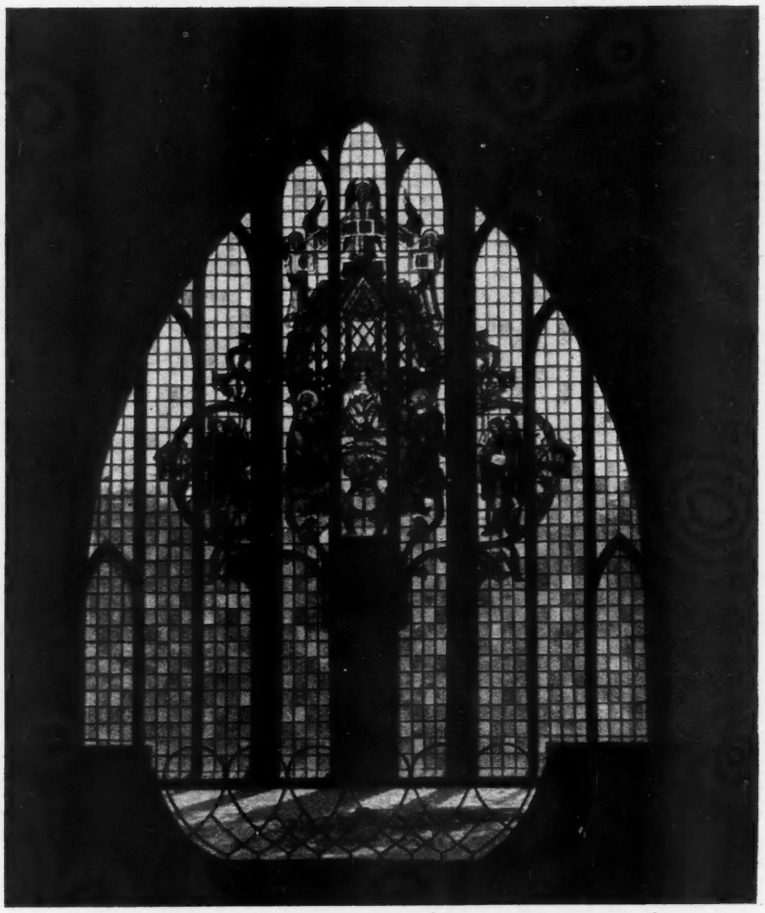
MR. J. O'HANLON HUGHES, F.R.I.B.A., ARCHITECT.

Both Church and Presbytery have been planned on a site between Village Way and the Public Park. The area of building was arranged to comply with the Town Planning Regulations, this necessitating the steep roof section of the Church, taking advantage of the statutory height being measured half-way up the gable, thus allowing the maximum cover of site.

As the best views of the structure are obtained from the public park and a tower was desired, the architect took the unusual course of carrying the whole of the sanctuary walls up as the tower. The foundations are of reinforced concrete designed to give an even load over the soil of not more than one ton per square foot. The walls are of brickwork, arcaded buttresses being used over the side aisles to reduce the spans of the steel trusses, and provide a wide and even-bearing area for them.

By adopting the vaulted roof to the nave, two galleries were provided to it for artificial lighting, the lamps being arranged to focus through windows in the ceiling to produce shadowless illumination. Dutch bricks are used throughout for the external facings, with dressings in Clipsham stone; and sand-lime bricks up to 7 ft. high throughout the interior. The ceilings are in fibrous plaster.

Seating is provided for 420 persons in the nave with a clear view of the sanctuary. Austrian oak blocks are laid to all floors except the sanctuary, which is laid in terrazzo tiles. The Communion rail is cast in terrazzo, and a feature of this is the wood centre gate on a new principle of folding leaves which slide open, with the top rail hinged to fall neatly and enclose them when the gate is open. The heating is a pipeless system (with gratings in the floor and a special duct taken up to the tower gallery, which is specially devised to prevent down-draught) with provision for a roller shutter to be operated from the sanctuary.

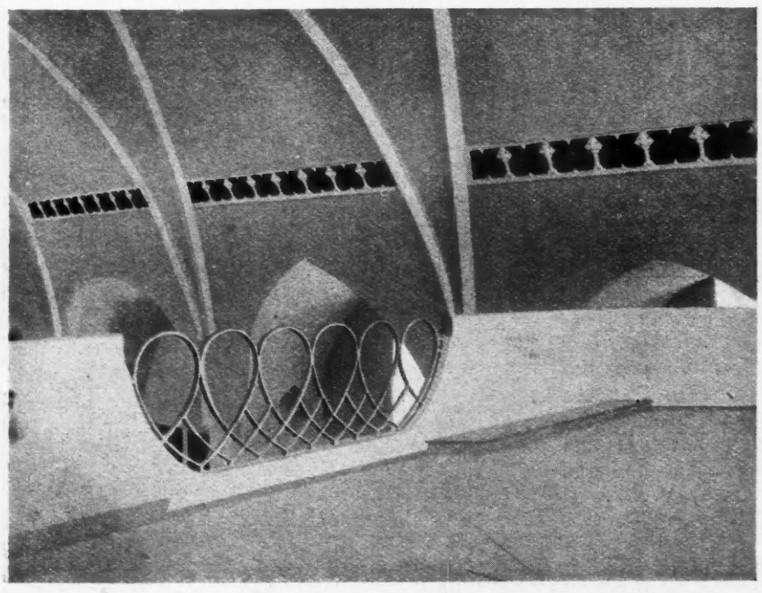


THE EAST WINDOW, DESIGNED BY MR. PATRICK A. FEENY.

The altars have been formed in Portland stone, and these—as well as all fittings and furnishings—were designed by the architect, the altar hangings and furnishings for the high altar being arranged according to the design of Mr. Geoffrey Webb. The large ninelight window over the main entrance doors is in stained glass, depicting "The Nativity" and a single stained glass window is over the high altar depicting "The Resurrection." These were designed by Mr. Patrick A. Feeny. The statue of Our Lady and Child and carvings over the entrance doors were executed by Mr. Linsay Clarke. The clerk of works was Mr. Wornell.

The general contractors were Messrs. M. J. Gleeson, Ltd., of North Cheam. Sub-contractors associated were:—

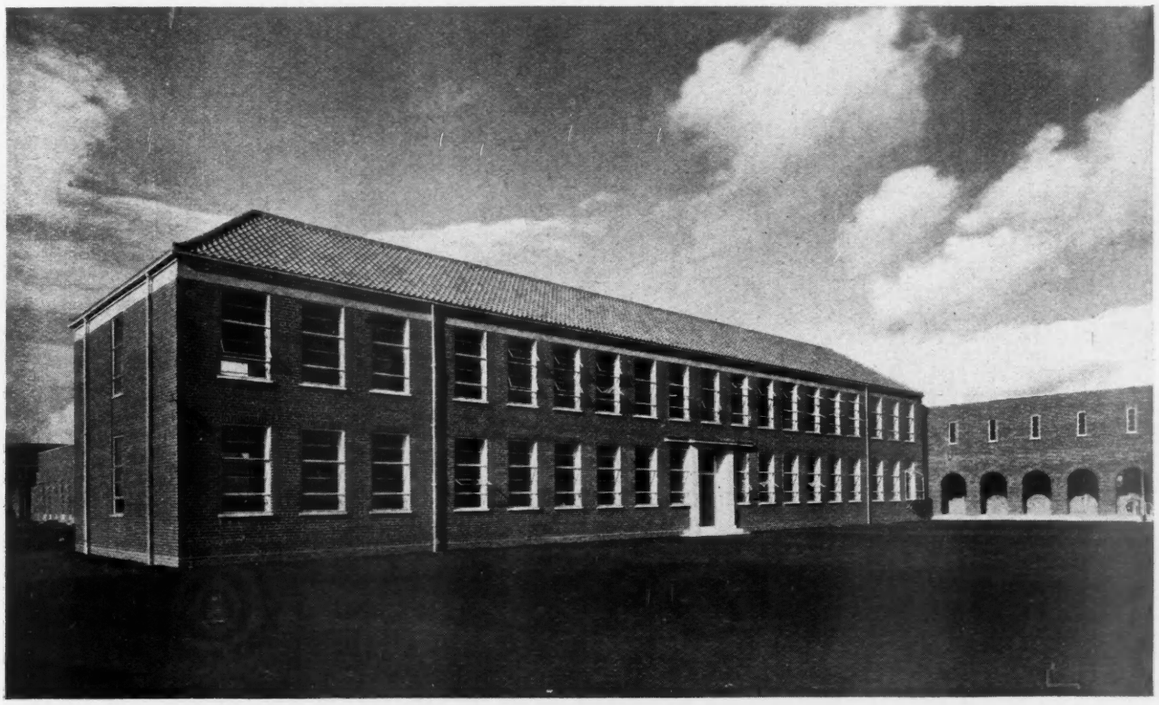
R.c. foundations, Trussed Concrete Steel Co.; Dutch facing bricks and fletton and engineering bricks, J. P. Walshe and Sons, Ltd.; cement, Alpha Cement, Ltd.; "Hydralime" for plastering and "Cullamix" for painting, Cement Marketing Co., Ltd.; art paving to sanctuary, Diespeker, Ltd.; Clipsham stonework, J. Bysouth, Ltd.; cast stone, Patent Victoria Stone Co.; terrazzo communion rail and font, W. Baxter Elliott; pipeless heating, John Grundy, Ltd.; suspended plaster ceilings, Tomei and Sons, Ltd.; steelwork, Powers and Deane-Ransomes, Ltd.; seating and sacristy fittings, Seco, Ltd.; sedilia, H. A. G. Partridge; pulpit, Samuel Elliott and Sons; electrical installation, A. J. Dean and Co.; ironmongery, Knight and Co.; tiling, Tuxfords; asphalt, Ragusa Asphalte Co.; and stained glass (execution), Hardman's of Birmingham.



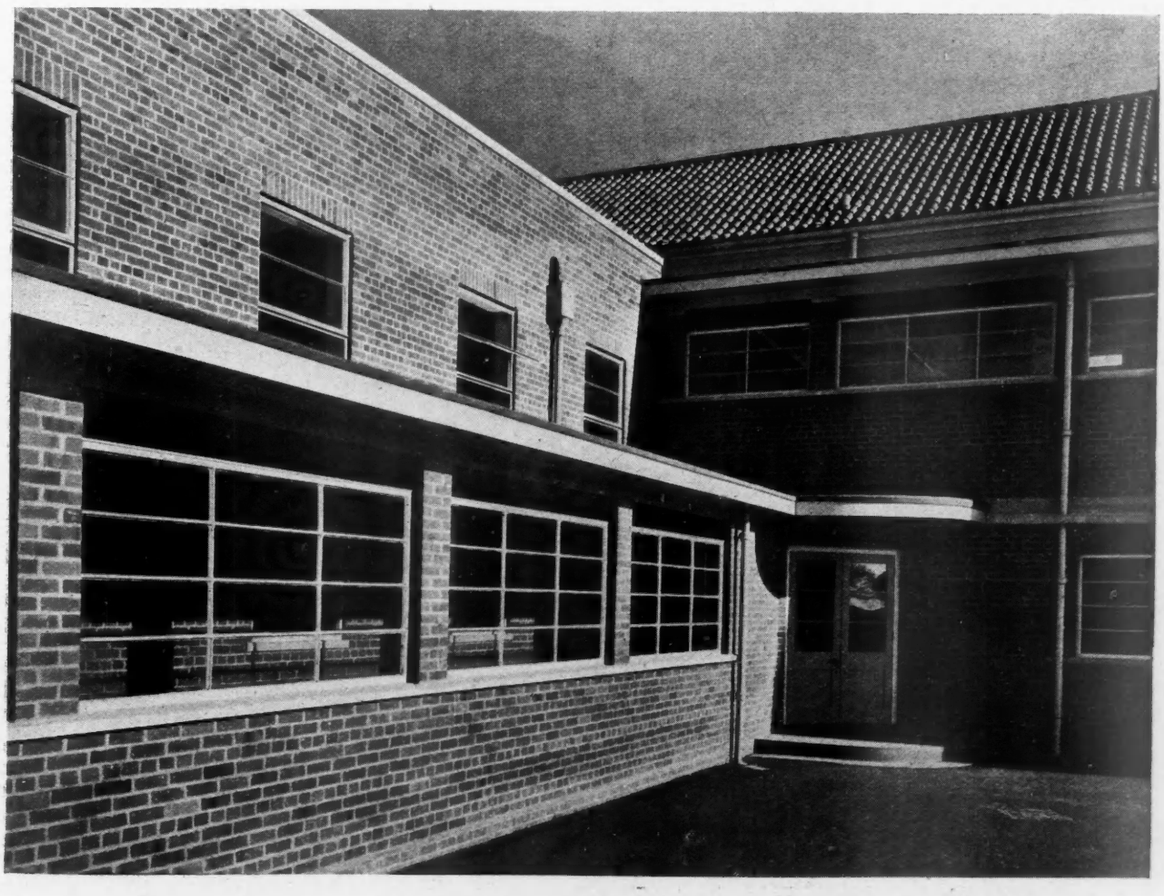
Left THE GALLERY AT EAST END.

NEW SCHOOLS FOR WEST SUSSEX COUNTY COUNCIL, BOGNOR.

MR. C. G. STILLMAN, F.R.I.B.A., COUNTY ARCHITECT.

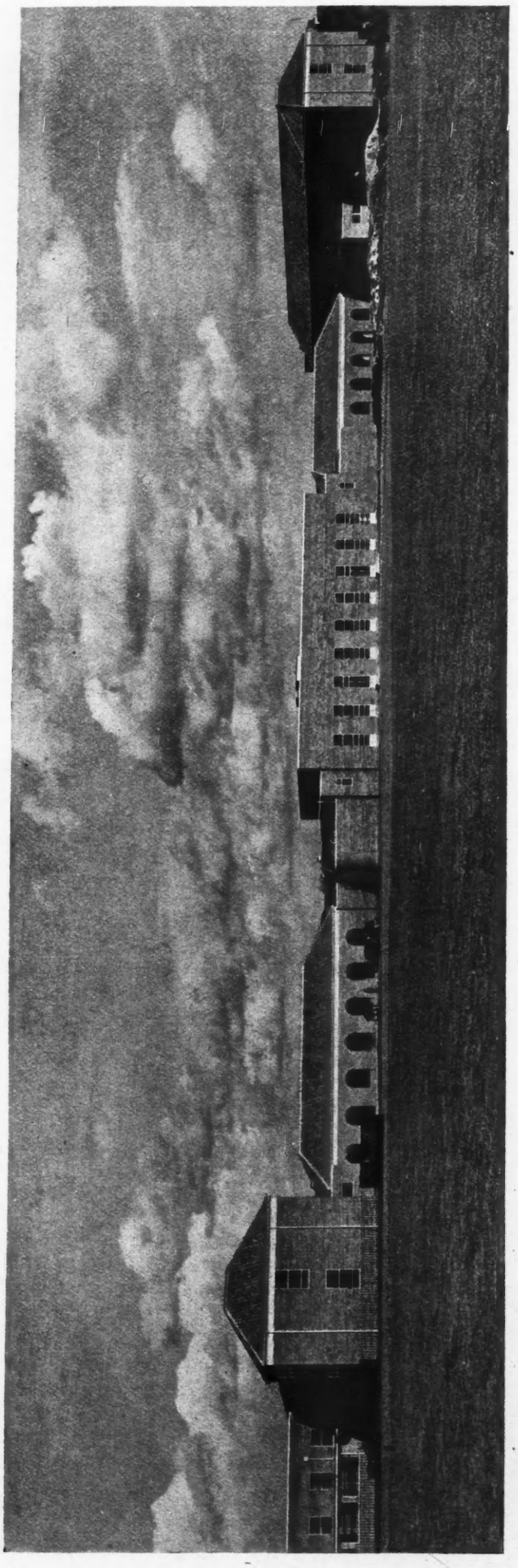


VIEW OF MAIN BLOCK, SENIOR GIRLS' SCHOOL.



ENTRANCE TO SENIOR BOYS' SCHOOL.

NEW SCHOOLS FOR WEST SUSSEX COUNTY COUNCIL, BOGNOR.



GENERAL VIEW, FROM PLAYING-FIELD.

THE grouping of four separate schools as a continuous block on one site, whilst effecting considerable economies, adds to difficulties of planning. The principal features in the layout are as follows:—

(1) Placing the Senior Boys' school at one end of the group with its independent entrance, and the Senior Girls' school at the other end, with the Junior and Infants' schools between.

(2) Placing all entrances to the school from the playgrounds, giving direct access to offices and cloakrooms, the playgrounds being on the side opening on to the playing field.

(3) The placing of the classroom wings as far as possible on the opposite side to the playgrounds, remote from noise and disturbance, and giving all classrooms a south-easterly aspect.

(4) Placing the Maternity and Child Welfare Centre (which is also the School Clinic) in a corner of the site nearest the main approach for convenience of the public and adjoining the Senior Girls' school.

The general view on this page shows the buildings as they face on to the playing-field. The four schools are shown in the group, the senior school for 360 boys, which is at the extreme left hand end (that is to say, to the north end); the senior school for 360 girls on the right-hand side (to the south); and between the two senior schools a junior school for 384 and an infant school for 240.

The combined hall for these two last departments is the centre block between the north and south wings of the senior schools. On either side of this central hall are the cloakrooms and lavatories, approached immediately off the playground, and at the rear of this are the classrooms, running at right angles in a north-easterly direction. It will be seen from this that all the classrooms are so placed to have a south-easterly aspect.

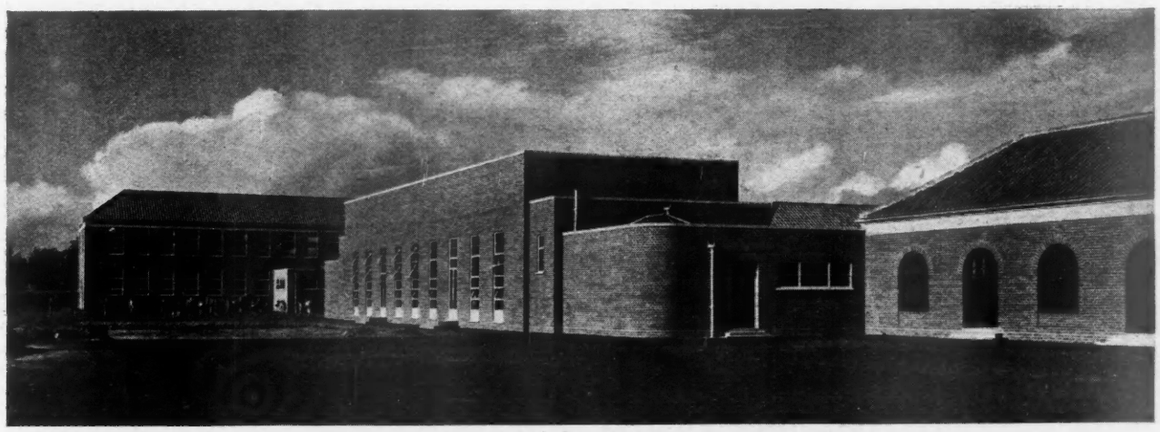
The central hall is divided by a folding partition, so that the junior and infant departments can use it for their separate purposes, but by means of the folding partition it can be thrown into one large hall. The flat roof above this hall, which is surrounded by a high wall, is accessible by means of a staircase, and can be used for open air classes.

The senior schools have their own assembly halls, and the four schools, although grouped together in this way, are self-contained units, having independent entrances, cloakrooms, offices and rooms for the staff, etc. The school clinic adjoins the senior girls' assembly hall, which is on the first floor. Under the hall, at ground-floor level, is a large dining-room for those children who stay at the school for midday meals. The clinic has its independent entrance on to West Loats-lane.

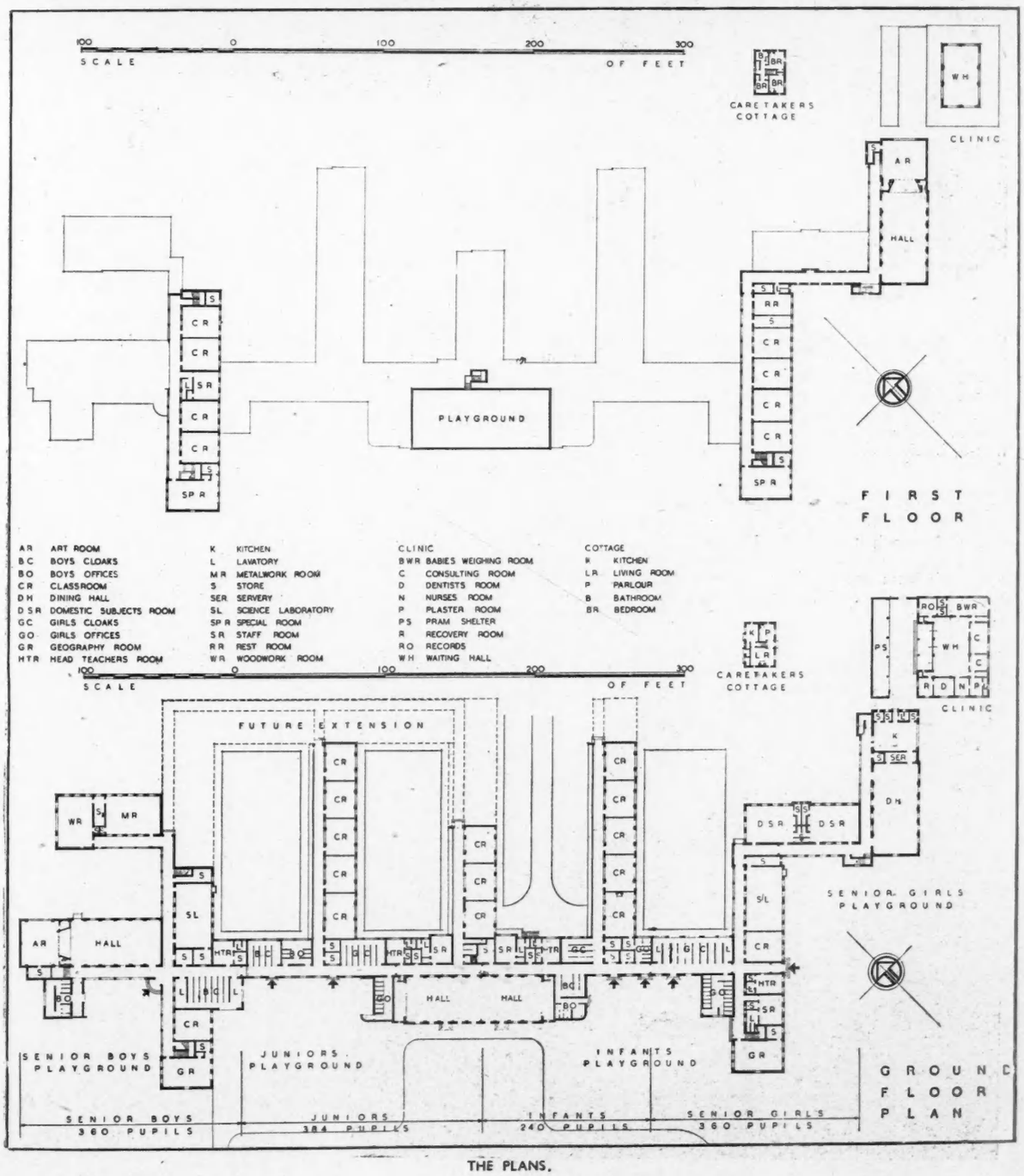
The senior girls' school contains special classrooms for instruction in cookery, laundry work, needlework, science, art and geography. In the case of the senior boys', similar special rooms are provided for woodwork, metalwork, and the science, art and geography subjects. In the infant section, a special room is provided for the very young children.

Considerable economy has been effected by grouping these four schools together on one site, and by carrying out the erection under one building contract. By this means, the four schools can also be heated from one central boiler house. The tarpaved playground, although placed opposite each department for their separate use, can (with the exception of the boys' school) be used jointly for organised physical training by the senior girls, the juniors and the infants,

MR. C. G. STILLMAN, F.R.I.B.A., COUNTY ARCHITECT.

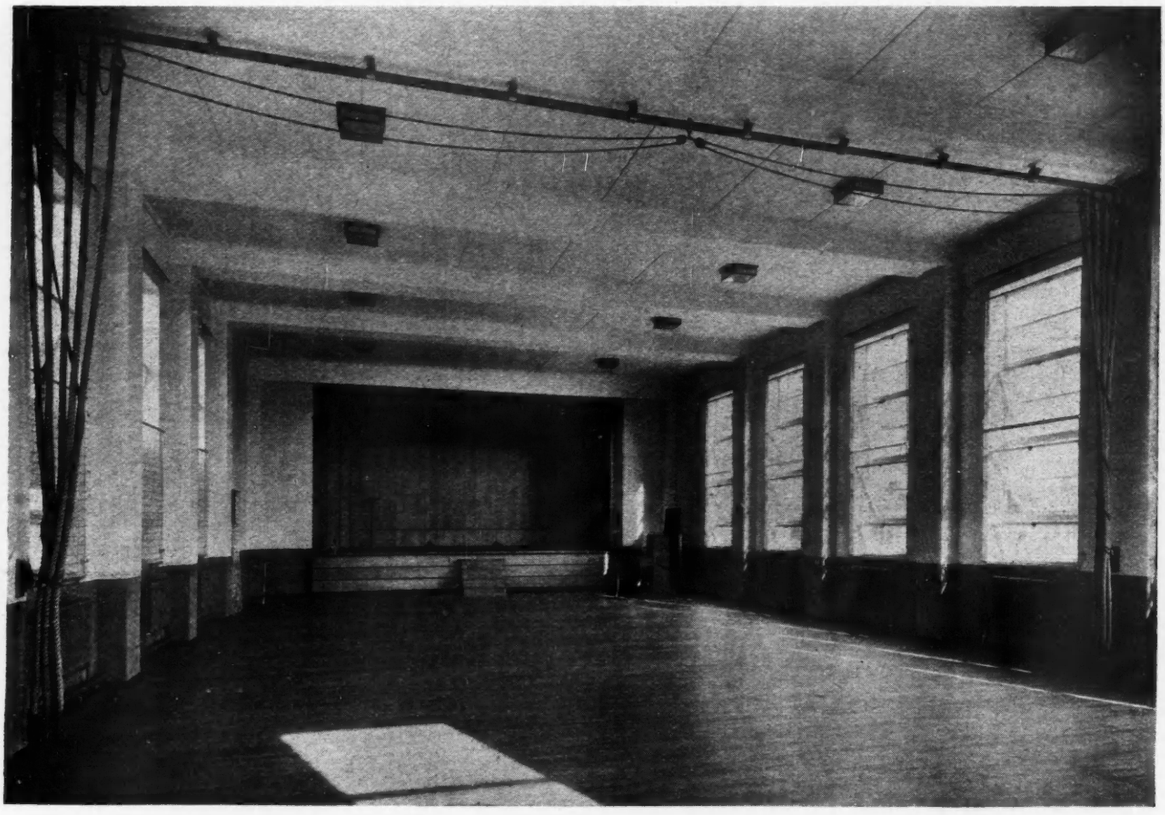


VIEW FROM PLAYING FIELDS OF JUNIOR AND INFANT HALLS.



THE PLANS.

NEW SCHOOLS FOR WEST SUSSEX COUNTY COUNCIL, BOGNOR.



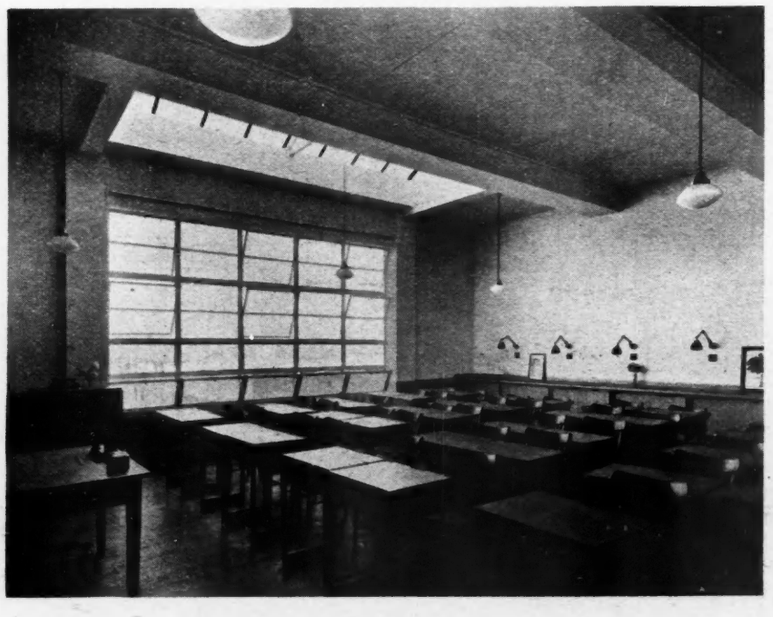
THE HALL, SENIOR BOYS' SCHOOL.

there being no actual division between these playgrounds. Furthermore, the grass playing-field, of roughly eight acres, opens immediately off the playgrounds. The scheme includes for a caretaker's house, behind the clinic, for a resident caretaker.

The main approach for the girls, juniors and infants is from West Loats-lane, and the senior boys can also reach their school from this side; there is also a further approach from the northern end of the site for all children attending the schools.

The contract was carried out by Messrs. Chapman, Lowry and Puttick, Ltd., of Haslemere, Surrey, the contract sum being £55,991.

Main sub-contractors engaged on the work were: Bricks, Associated Brick and Tile Works, Ltd.; asphalt, G. Asserati, Ltd.; roof tiling, Roberts, Adlard and Co. Ltd.; flooring (wood), Horsley Smith (Floors), Ltd.; flooring ("Ruboleum"), B. Holden and Co., Ltd.; blackboards, North of England School Furnishing Co., and Wilson and Garden, Ltd.; laboratory fittings, Andrew Bentley, Ltd.; ironmongery, Bunce and Co., Ltd.; cloakroom fittings, Alfred Brown and Co.; steel mesh reinforcement, British Reinforced Concrete Engining Co., Ltd.; steelwork, M. T. Shaw and Co., Ltd.; steel framing to sectional verandah enclosure, Light Steel Sectional Constructions, Ltd.; metal windows and lantern lights, Crittall Manufacturing Co., Ltd.; sanitary fittings, J. and R. Howie, Ltd.; heating installation, T. S. Knight and Sons, Ltd.; electrical installation, Phillips and Dart, Ltd.; fibre board, Patent Impermeable Millboard Co., Ltd.; tarpaving, Wainwright Paving and Contract Co., Ltd.; basement, Piling and Construction Co., Ltd.



Left: A TYPICAL CLASSROOM.

MR. C. G. STILLMAN, F.R.I.B.A., COUNTY ARCHITECT.

NEW HOUSES ON THE CADOGAN ESTATE, CHELSEA, S.W.

MR. AUSTIN BLOMFIELD, M.A., A.R.I.B.A., ARCHITECT.

GENERAL VIEW OF BLENHEIM STREET

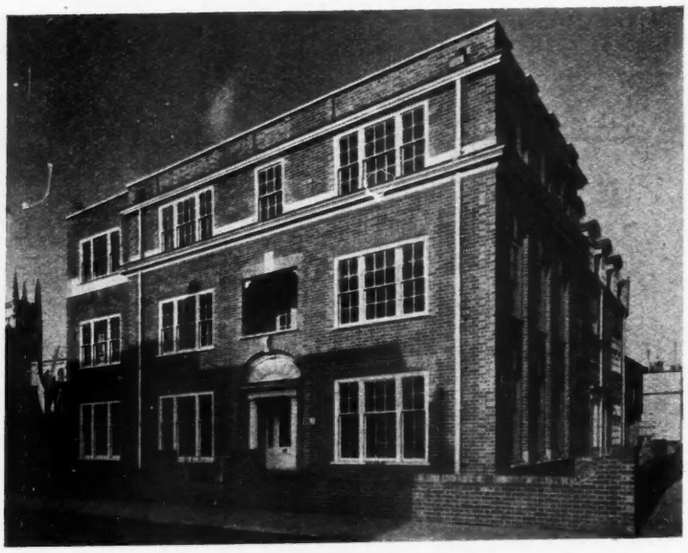
THE houses illustrated in these pages were designed for the building owners, Messrs. John Heagerty, Ltd., of Walpole-street, S.W.3, who were also the contractors for the work. They have been built during the course of the last two years in Blenheim-street and the streets adjoining.

In general the houses follow the accepted requirements of to-day as regards their planning and construction. They are of varying sizes and accommodation, as might be expected in view of their number, which will total some 40 when completed, with the necessary garages.

The principal problem of design in the Blenheim-street section was to produce a row of houses which would be sufficiently homogeneous in design and attractive in appearance, without losing individuality. Inasmuch as most of the frontages are of different length, a regular terraced treatment with a central feature or balanced ends was unsuitable. The houses are therefore frankly different in elevation and are based on traditional English motives in design; at the same time they are linked together by a uniform eaves height and a general similarity in windows and spacing.

A number of different materials were employed in the elevations. The bricks are in part Adamantine bricks supplied by Finnis and Ruault, part Coleford purples or silver greys, part Enfield reds or multi-coloured, with a sparing use of Monks Park Bath stone. The roofs are covered partly with Collyer's red tiles, some with dun-

HOUSE AT CORNER OF BLENHEIM STREET WITH BURNSALL STREET.

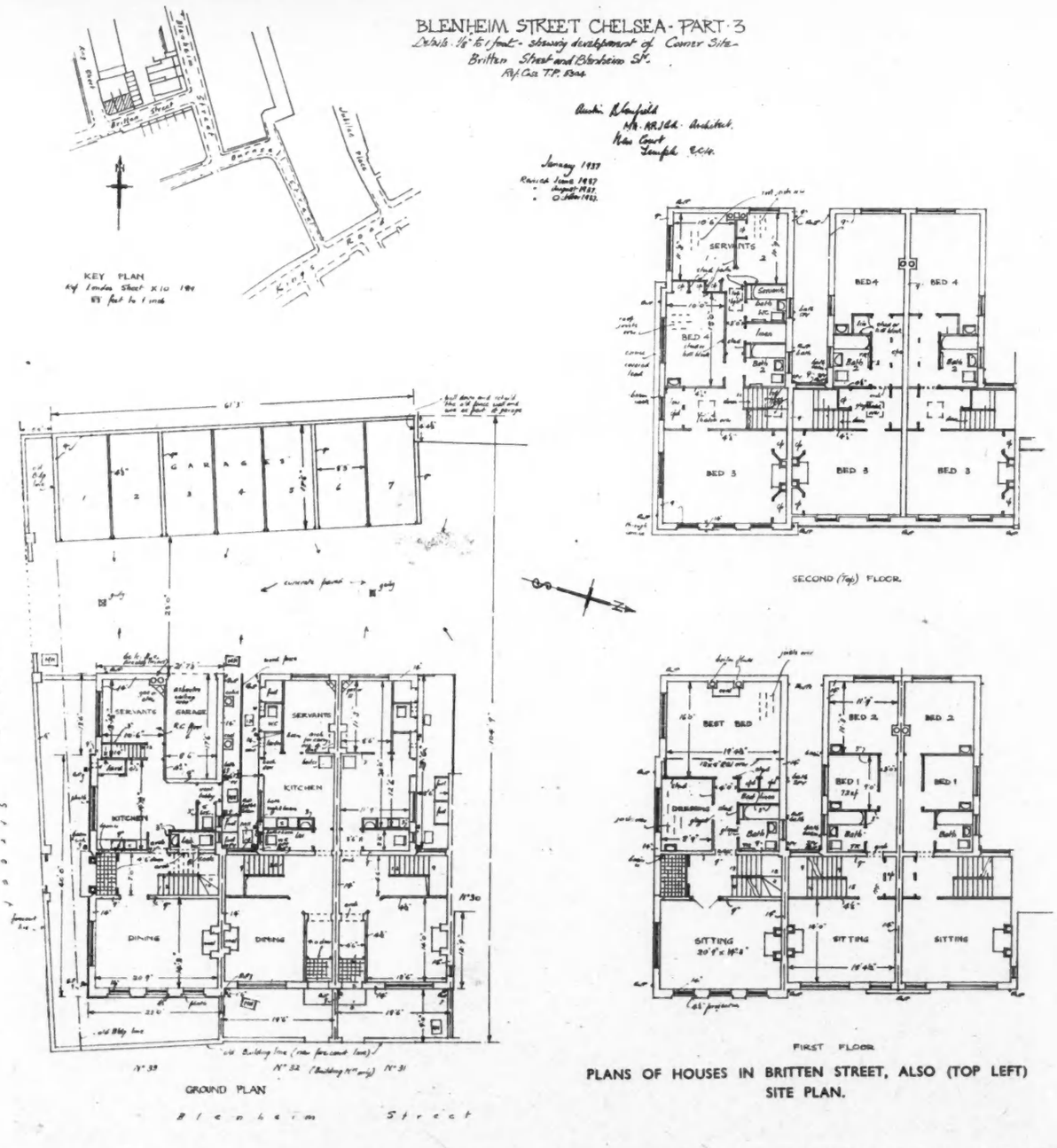


coloured tiles; some black pantiles (Langleys) and some with Delabole slates, which are also employed on part of the houses (not shown) in slate hanging. Except for the corner houses, which have sashed windows, all houses have wooden casements of uniform pane sizes.

Much of the joinery was from William Welch and Son; the plumbing by Stitson White; the decorative ironwork for balconies and fanlights over doors by A. C. Blackmore. Internally, the houses were completed in keeping with the care given to the elevations, with hardwood floors, well-finished bathrooms, kitchens, fireplaces, etc. The plastering used throughout was "Thistle" brand, carried out by Pollock Bros.

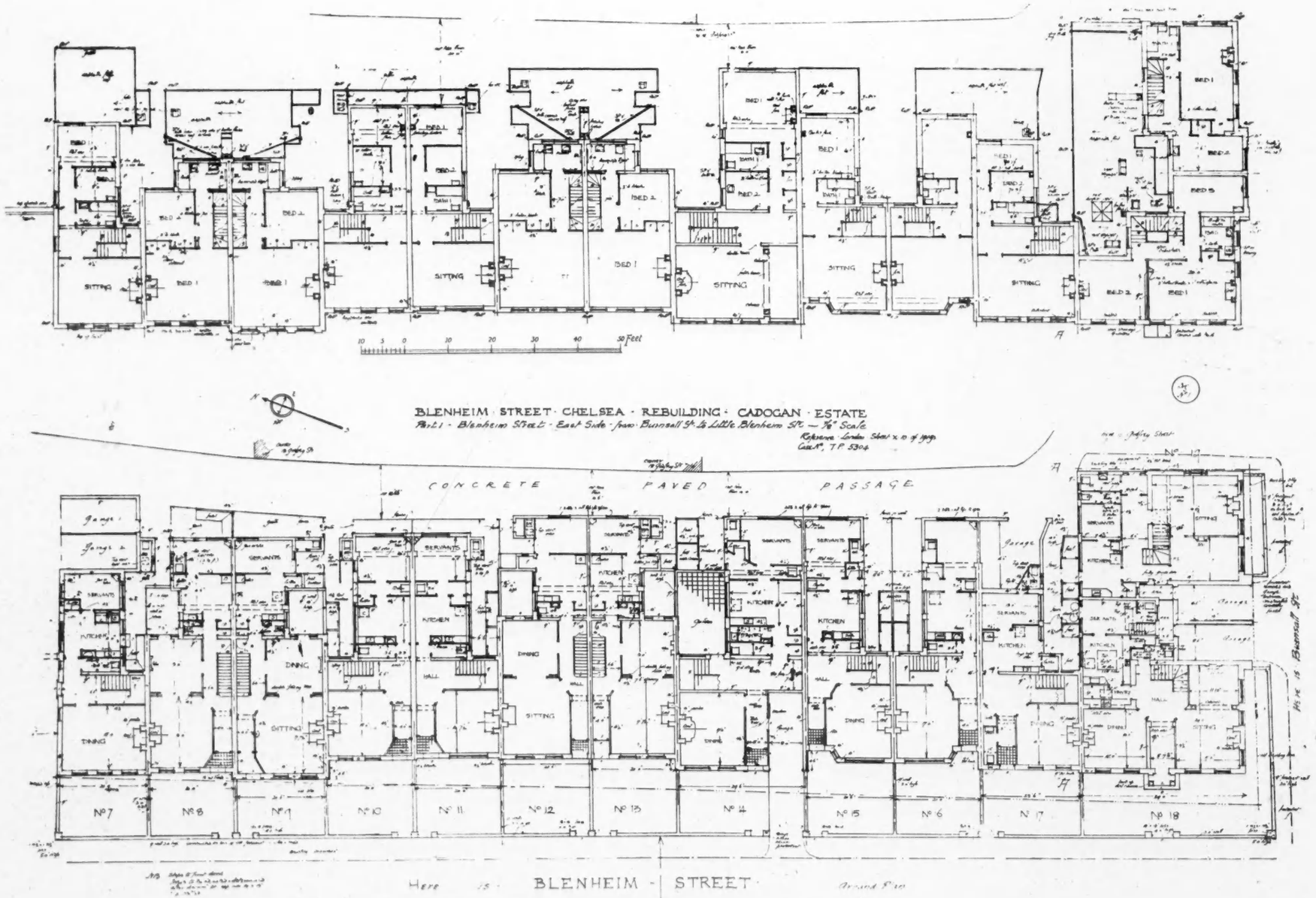
The architect was Mr. Austin Blomfield, M.A., A.R.I.B.A.

Left: HOUSES IN BRITTEN STREET, CHELSEA.



PLANS OF HOUSES IN BRITTEN STREET, ALSO (TOP LEFT) SITE PLAN.

NEW HOUSES ON THE CADOGAN ESTATE, CHELSEA, S.W. MR. AUSTIN BLOMFIELD, M.A., A.R.I.B.A., ARCHITECT



THE PLANS OF BLENHEIM STREET HOUSES.

NEW HOUSES ON THE CADOGAN ESTATE, CHELSEA, S.W.

MR. AUSTIN BLOMFIELD, M.A., A.R.I.B.A., ARCHITECT.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

"Murus" and the R.I.B.A.

To the Editor of *The Builder*.

Sir,—"Murus," in his last week's contibution, refers to a "Reform from Within" group to deal with the various activities of the R.I.B.A. With the object of simplifying their discussions I should like to submit the following notes:—

(*c*) It has been claimed that owing to its present form the R.I.B.A. *Journal* is self-supporting. If this is the case, it would not be an economy to reduce it to a private quarterly.

(*d*) This is more or less the programme that was adopted under my auspices as a war measure in 1915, but in the usual circumstances this insurance could be perfectly well met by membership of the existing Artists' Annuity Fund. Incidentally, it might be well to inquire whether the organisation of the Architects' Benevolent Society is not duplicating the work done by the Artists' General Benevolent Institution, which has always been supported by architects, and has dealt with them quite fairly.

H. V. Lanchester.

19, Bedford-square, W.C.1.

[Note: "*c*" and "*d*" relate to paragraphs in "Murus's" Diary.—Ed.]

To the Editor of *The Builder*.

Sir,—"Murus" has certainly voiced the feelings of many members of the R.I.B.A., but it is questionable if he should have given publicity to R.F.W. (Reform From Within) before this remarkable body of opinion has had time to formulate a hard-and-fast policy. But we cannot resist this temptation to tell your readers a little more of that policy than "Murus" has disclosed.

R.F.W. is open to all Fellows, Associates, and Licentiates of the R.I.B.A.

R.F.W. makes no distinction between private practice and official practice, but stands for raising the status and remuneration of all chartered architects, assistants included.

R.F.W. thinks this can be done by forcing into the public view the value of employing the architect: this body does not believe in advertising, which may cheapen the profession, but in organised publicity.

R.F.W. believes that the affairs of the R.I.B.A. should be dictated by a council of members, but that members of council should include young men as well as old, "official" as well as private practitioners, assistant as well as principal, and that each of these sections of membership should be represented in fair proportion to the numbers in each class of membership.

R.F.W. believes that the Architectural goal is to put the profession on the map, not in terms of Headquarters in the Metropolis, but in terms of active co-operation throughout the country.

R.F.W. has a plan for putting the R.I.B.A. finances in order.

If any of your readers want to hear more of R.F.W. they should write to the Acting Organising Secretary, 706, Frobisher House, Dolphin Square, London, S.W.1, marking their letters R.F.W.

R.F.W.

P.S.—R.F.W. is strictly non-political.

To the Editor of *The Builder*.

Sir,—It is with the greatest interest that I read "Murus's Diary" for last week, and whilst being in full sympathy with his ideals, I must point out that, whilst there are a great many members of the R.I.B.A. who are very discontented, they will be slow to express themselves publicly. This will spring from two sources, firstly, from cowardice, since secretly they might hope to fill a place on the Council at a future date, and secondly, from a certain middle-class idea of respectability. That such a state of affairs should exist is preposterous, and that is why I am writing to say that it will give me a great deal of pleasure if these 5,000 malcontents will write to me, telling me of their grievances, when we can prepare a memorandum, and, if necessary, form an R.I.B.A. Reform Society, so that we can present these grievances and suggest amendments to the by-laws, and generally put our Marble Halls in order.

To mention a few of the more obvious reforms, there is the attitude to salaried assistants; the lack of a financial and an unemployment policy; and that revolting by-law that takes away a person's diploma, which has cost £1,500 in architectural education, because he fails to pay £3 3s. at some time.

I write in the hope that you will publish this letter, and that these unfortunate people may know that there is somebody who is prepared to champion and take up these reforms; and if people will only write, then plans can be made more rapidly.

Winston Walker
(A.R.I.B.A., A.A.Dipl.).

3, Trafalgar Studios,
Manresa-road, Chelsea, S.W.3.

The Architects' Registration Council.

To the Editor of *The Builder*.

Sir,—In the report of the Council meeting which appeared in your last issue, you quote fairly completely the remarks I made regarding the constitution of the Admission Committee. I feel, however, that the report was not sufficiently full to enable "unattached" registered architects to appreciate just what was gained in their interests.

Without reiterating the details, it can be said that as a result of the discussion the "unattached" are assured of having at least two representatives on the Admission Committee.

From the voting—24 in favour and none against—it will be gathered that the motion was supported by all bodies, and the "unattached" representatives appreciate the support given by the R.I.B.A. representatives and those of the other bodies. This is an indication that all bodies are now working together in an endeavour to make the Act a successful measure.

Gordon W. Jackson.

Hinton Buildings, Hinton-road,
Bournemouth.

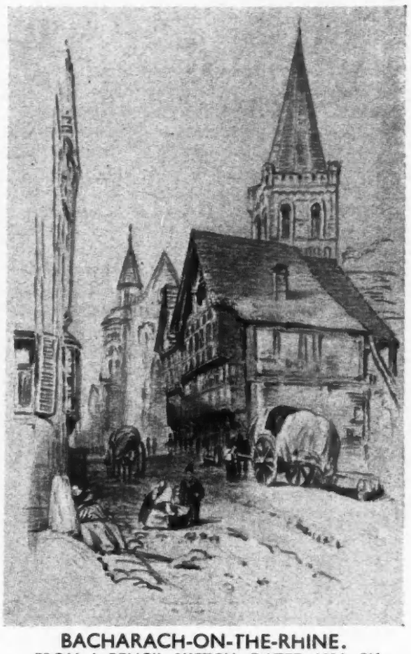
A Pictorial Puzzle.

To the Editor of *The Builder*.

Sir,—I was much interested in the view of Bacharach-on-the-Rhine, by J. D. Harding, published in your last issue [p. 4, January 6]. This is virtually identical with the drawing of the same place drawn by my great-uncle, R. H. Manning, in 1836. Harding's drawing is dated 1834, but the date looks as though it had been put in afterwards. Even the figures of the cart, washerwomen, etc., are the same. My uncle's was one of a series of Rhine views drawn on the spot. He is known to have been a friend of Harding, and he used to travel a great deal with other young artists. This suggests that they were together when the sketch was made, and that Harding's was subsequently wrongly dated 1834. The identity of the figures would be explained if one drew the figures and the other copied them in afterwards, possibly at the hotel in the evening. That one sketch is not a copy of the other is conclusively shown by numerous small differences in detail and in the angle of vision. I enclose a reproduction of my uncle's sketch, which makes an interesting comparison. The difference in tone values is striking.

Manning Robertson.

3 and 4, College-street, Dublin.



BACHARACH-ON-THE-RHINE.
FROM A PENCIL SKETCH, DATED 1836, BY R. H. MANNING,
(See this Page)

Liverpool Cathedral: The Year's Progress.

The December issue of the Liverpool Cathedral Committee's Quarterly Bulletin states that the past year has brought appreciably nearer to completion the work in hand. The scaffolding which still partially blocked the Under Tower at the close of 1937 has long since been removed and the whole of the underground space required for ducts and chair stores excavated.

"The Vestey Tower has risen to an average height of 283 ft. above St. James's-road," continues the Bulletin, "and if its growth has not been quite as great as in the preceding 12 months this is amply accounted for by the much greater intricacy of the stonework, particularly that of the corner turrets. As only 49 ft. remain to be built to reach the top of the parapet (the pinnacles rise to a further 15 ft. to give the Tower its full height of 347 ft. above St. James's-road) there is no reason to suppose that the Tower will not be finished in 1941, which is the schedule date for its completion. . . .

"On the Tower the outstanding event of recent weeks has been the dismantling of the two cranes in order to raise them sufficiently for their final task. This involves the temporary suspension of stone-setting but does not really delay the work, as it is possible to put stones into position in considerably less time than it takes to carve them."

PRESENT TENDENCIES IN THE BUILDING INDUSTRY

BY H. B. BRYANT

In reviewing the Building Industry for the period of the past year, probably the most direct method of approach will be to deal, in the order of importance, with the development of those primary matters bearing on the long-term comprehensive view in Industry, which have been dealt with during the period under review, and the lines upon which progress is desirable. The fact that comparatively little has been heard of some of these matters is no criterion of their fundamental importance, especially from the national economic point of view.

The first and most important subject is, unquestionably, the development of information concerning the economic effects and the importance of the influences of the Building Industry on national well-being. While the recognition of this fact has undoubtedly made progress during the past year, the idea that the Building Industry has the widest of economic and social backgrounds is still a comparatively new thought to many in and about the Industry—and not least, let it be said, among the leaders of some of its ancilliary connections, particularly those coming within the nomination of services—while in many directions even the first glimmer of its importance has not penetrated.*

The need for expenditure on rearmament and national defence generally has, however, produced striking examples of the economic effectiveness of public expenditure through the Building Industry, but its importance and influence are still not sufficiently appreciated either by the great majority in the Industry itself or by the general public. The absence of that recognition imposes a direct responsibility upon every member to see that these intensely beneficial national effects are maintained by an adequate expenditure of public and private money through the Building Industry. It is no exaggeration to say that no influence adversely affects so quickly or so directly the national well-being as does any curtailment of expenditure through the Building Industry.

It has been clearly indicated during the past year that trade loss to the country as a whole through the unemployment of one building operative is at the rate of £500 per annum. In other words, for every one man unemployed in this Industry for a week, about £10 is lost to the trading community of the country. There is a very definite moral responsibility falling upon the Building Industry to ensure recognition by the public of its economic repercussions involving a reconsideration of the Industry's internal expenditure.

To ensure that trade shall steadily increase, there must be maintained an effective central organisation for this purpose. The duty of that body is not merely to develop building activity for building activity's sake. The fact is that there is sufficient potential trade for the Building Industry in the line of economic progress and development to justify the continued expansion of building activity over very many years to come —and not entirely in the interest of the Industry itself, but demonstrably in the interests of the country as a whole and, moreover, in the wider interests of the development of the Empire.

A Bright Future.

A survey of the potential industrial activity of the nation as a whole indicates that no industry is more favourably placed for future trade than the Building and Allied Industries. Not only has it the huge problem of overtaking the obsolescent factor in building and utility structures generally, which of itself is a colossal task in the field of economic trade, but it has an even greater potential field of development in our colonial possessions. Economic information and colonial expansion are very closely allied. They are, and must become increasingly so, a matter of intense interest to, and the concern of, the whole Building Industry. It is conceivable that in certain parts of England at various times there will be a falling-off of building demand, and consequently a redundancy of building material. With an effective Colonial development policy based upon sound economic principles, whatever fall in building demand may exist in the various centres of population in the British Isles could easily be compensated by a concerted and efficient policy of Colonial expansion. One of the tasks of any central bureau of economic information must in the future lie increasingly in the collection of information as to the economic possibilities of both home and colonial structural development.

Such a possibility opens up a very wide field for the expansion of all types of building activity, but an entire change in the approach to the consideration of Colonial development must first take place. In the past, Colonial development took place just as fast as pioneers and individual adventurers like our old merchant adventurers developed in the Colonies themselves. They went there under the most unfavourable conditions, with no public facilities whatsoever. It is quite clear that science has put into our hands—very largely as the result of economic research—an effective means of fostering Colonial development, namely, the recognition that it is thoroughly good business to further the development of public facilities in the way of roads, sewers, education, lighting, and communications and transport facilities generally. By the provision of such facilities in advance of the pioneer coloniser, the rate of colonisation can be greatly accelerated.

Perhaps the most striking example of Colonial expansion in this way is the development of the United States of America, where with all the disadvantages facing pioneers on a virgin continent, the fundamentals of economic development — public utilities in their widest sense—have contributed more than any other material force to the rise and wealth of that country. The same principle could be followed—and, indeed, must be followed—if effective Colonial development in our own Empire is to take place and the justification of our possession of Colonies maintained. To ensure development in our African Colonies in particular—and in possibly some of our Dominions also—a pooling of financial resources, directed to, and based upon, a comprehensive development policy, must be a necessary preliminary to a widespread enhancement of the standard of living, which, after all, is the main objective of colonisation (as it is of the development of the home market). The measure of the task and the opportunity can be seen in the fact that, whereas the budgetary figure per head in England and New Zealand is somewhere about £18 (which, of course, corresponds in direct ratio with the standard of living), in Nigeria and the neighbouring Colonies—where even a greater potential population requires the same services and desires the same standard of living and the same facilities as are enjoyed by the British—the budgetary figure per head is under 6s.! Such disparity in public expenditure is the measure of the field of opportunity facing the building industry in the Empire. By a concerted policy the same measure of development which in London has taken about 2,000 years can, as in the case of America and New Zealand, be achieved in something well under a 100 years. With the application of modern technical science, guided by those vital things economic information and principles, there is no reason to think other than that Colonial development can take place in a much shorter period than has been the case with comparable development in the United States. In this connection it must be ever borne in mind that in the years to come the British Isles are likely to be faced with a decline in the birthrate of population, and that every unit of decline means a relative constriction in potential building activity, leaving only the task of overtaking the obsolescent factor in our buildings as the largest field of home building activity. Thus, the entry into the sphere of active Colonial development is a matter of increasing importance to the wider and long-view interests of the Building Industry.

It is not the purpose or the object of this article to touch in detail upon the financial aspect of this problem, but it is, perhaps, as well, in case any doubts on that head should creep in, to say that with the British financial resources generally facing an increasingly constricted field of foreign operation, the home problem of overtaking building obsolescence and the Colonial problem of trade and growth expansion represent a field of investment to which the financial interests of this country should not be blind. There is, therefore, a tripartite interest in the whole of this matter, which it would appear to be the duty of the Industry to foster, namely, the relationship between finance at one corner, technical progress and science at the other, resting upon the basis of economic principle and information.

In these circumstances it would appear to behove the Industry, in the coming year, to pay a much increased regard to the fundamental importance of maintaining a supply of such economic information and statistics as will enable its trade to be developed upon an ordered, rather than upon, as at present, an entirely capricious and unco-ordinated, basis. The means to this end is the strengthening of the central organisation for the collection of economic information, and this can be done without one penny of additional charge to the industry.

It is true to say that whatever ills the

* The fact has to be recorded, however, that H.M. Government appears to have recognised this in some degree, in that they have at least realised the advantages of long-term public expenditure on capital works in certain, as yet undefined, circumstances.

Industry may suffer, arising directly from declining trade, there is the remedy in organised expansion. This organised expansion can be developed and executed without in the least undermining the individualistic character of the Industry.

While the trade of the Industry can be organised by collective action, the Building Industry itself can still maintain what is probably its greatest heritage, *i.e.*, the innate individualism of its members. Trade organisation on the one hand and individualism on the other can be developed upon a completely co-ordinated line as, in the case of the Building Industry, these forces are entirely complementary. The Industry properly organised, can bring such enlightened pressure to bear upon public opinion in general, and upon the Government in particular, as to ensure that its necessary volume of trade and general activity is maintained to the benefit of all. It can be maintained without in any way harming that vital individualism and craftsmanship upon which, in the Building Industry, as opposed to almost any other industry, its success depends.

The means to a comprehensive economic end is a much wider measure of support to the Industry's economic and statistical service, without which in modern times individual industries, but particularly the Building Industry with its large measure of dependence upon Government domestic policy, must be at the mercy of any minor economic blizzard or any adverse arbitrary decision that may arise, since without the assistance of a sound economic navigation, industry cannot enter and remain in the comparatively smooth sea of stabilized trade expansion. However effective its technique may be in other directions, without economic guidance the trade and welfare of the Industry must remain upon an almost entirely capricious basis. With a due measure of enlightened support there is, however, every reason to believe that increasing regard will be paid to this important aspect of industrial organisation during the coming year.

Dissemination of Technical Data.

The second most important matter to be dealt with is the question of the dissemination within the Industry of technical and scientific information. A beginning to what might well prove to be a most far-reaching effort has been made in the direction of establishing one recognised Centre for such technical information as is necessary to keep this side of the Building Industry abreast of the results of applied science and technique. There appear to be two principal reasons underlying consideration of this fundamental matter:—

The first is to ensure that only proved information of an entirely impartial character is rendered to the Industry at right and proper times, and

The second is to see that in the materials and new processes involved in the application of the arts and crafts of the Industry its essential and great traditional interests are not unduly sacrificed.

There is a real danger, under modern conditions in which new commodities can be easily marketed, of the traditional materials of brick, concrete, steel, clay, lead, glass, etc., being temporarily set aside under the influence of high-pressure salesmanship and it is obviously becoming increasingly necessary for some effective authentic centre to be established to which practitioners and manufacturers of all kinds in the Industry can appeal for positive information. The continued advent in the Industry, however, of new types and uses of materials is not necessarily bad, since it has become obvious during the past year that this has had a very good and stimulating effect on some at least of the traditional materials by drawing the attention of the manufacturers of these traditional materials to the necessity of themselves undertaking various kinds of research in order to ascertain the avenues and fields in which their materials can be used to an increasing extent. The uses of some of the traditional materials have considerably expanded during the last few years, and particularly during the past 12 months, due in a very large measure to the extensive research undertaken on their behalf. This is more especially instanced, perhaps, by development in the functional and decorative uses of brickwork, steel frame and reinforced concrete, but particularly to a continued happy amalgamation of these three forms of construction, together with an extremely effective adaptation of glass, plasters and natural and cast stone.

It may be right to summarise in this connection that the manufacturers of traditional materials have increasingly realised the importance of directing their energies towards expanding the total volume of trade, instead of competing directly one with another, in recognition of the tendency that, quite apart from direct advertisement, the professional and contracting sides of the Industry are themselves evolving a positive choice of material based upon scientific knowledge rather than upon purely traditional use, and it is the development of this choice that the traditional materials are, quite properly, fostering. The development of this movement is largely due to the work of the Building Research Station. It would appear that the Building Research Station will be called upon more and more to function both as a testing station and a clearing house for scientific information concerning the Industry. There can, moreover, be no question but that, in principle, the work carried out by the Building Research Station is an absolute essential to modern building requirements. In this connection it is to be regretted that H.M. Government is so utterly parsimonious in the matter of its grant to this Station at a time when the Government itself is employing the resources of the Industry to an extent which it has never done previously. In the many problems with regard to building construction in all its phases that are bound to arise in such matters as its Aid Raid Precautions activity, the Government appear to expect the Research Station to keep abreast of developments in such times of pressure without in any way receiving an increased grant.

Technical Education.

III. In spite of handicaps, the Building Research Station has made a splendid beginning in this direction by the recent publication of its first volume on Building Construction. Assuming, as it is easy to assume, that the whole of modern building knowledge can, with certain essential adjustments, be gathered and collated at the Watford Research Station, there is no doubt that not only a very great saving in expenditure on technical education could be effected, but also that the standard and status of the education facilities connected with the Building Industry would be infinitely higher than at present. This does not mean that the Building Research Station should be constituted the one sole fount of building technical knowledge, but that, associated with the Research Station, should be the whole of the experience and knowledge of practice possessed by the professional and trading institutions of the Industry and a constructive connection between the scientific and practical sides of the Industry thus effected. The Industry now is faced with literally dozens of bodies within and associated with the Building Industry charged with the duty of educating entrants into the various branches of the Industry, but there is, for practical purposes, no recognised means of keeping practitioners of all kinds within the Industry abreast of the findings of either applied science on the one hand or the practical improvements in technique on the other. In short, while tradition is a most excellent thing, it can never be a substitute for positive scientific achievements in practice. It is not too much to imagine that one complete and effective Council of Education for the Industry, based upon the findings of an efficient Building Research Station, effectively linked with the practical educational facilities of the Industry, would be infinitely more effective and infinitely more economical than the many separate centres which now exist.

There is, therefore, a strong need for a very wide major effort towards rationalisation on the purely technical training side of the Industry. In some respects some efforts to fill this gap have been made in the case of certain material manufacturers who have themselves set up, at considerable cost, their own technical and research institutions. Not in all cases, however, as has been previously indicated, has this work been done in order to ascertain the best means of extending the use of their material, but to a large extent it has been for the purpose of keeping the Industry as a whole informed as to the technical application of particular materials. Under an effectively co-ordinated scheme for the dissemination of technical information, such information would be put upon an established basis and would be made known to all active practitioners in the Industry through one central source. Thus, what under present conditions constitutes a great deal of unnecessary confusion as to the suitability of various processes and practices would be removed, to the lasting benefit of both manufacturers and users.

Whilst some thought has been given to this very important problem during the past year, it is quite clear that something of a much more practical and far-reaching nature is called for, and it would appear to be necessary at some early date for the Industry as a whole to make the very strongest possible representations to H.M. Government that the grant to the Building Research Station should be immediately at the very least quadrupled, and the Station placed in an impregnable position as a free scientific institution. The fact is that in so many of its processes and organisation the Building Industry is so effective, so efficient, and so few disputes and troubles arise from and within the ranks that a condition of general well-being is taken for granted. Conditions, however, are arising, making it increasingly incumbent upon the Industry to indicate to His Majesty's Government that the time has definitely arrived when, unless a complete change in the measure of regard paid to the constructional sciences by the relative Departments of Government is effected, not only will the Building Industry suffer but also the national well-being as a direct consequence.

LONDON BUILDING BY-LAWS—XLVI

By ALFRED H. BARNES, F.R.I.B.A., and C. ROLAND WOODS, M.B.E., LL.B.

PART VIII.—MISCELLANEOUS (*Continued*).

Horizontal Fire Checks.

By-laws Nos. 137, 139, 140, 141 and 144 contain requirements relative to horizontal fire checks which are analogous to vertical checks inasmuch as they constitute external enclosures, separations of what are virtually different buildings, and internal separations of parts of the same building.

The requirements of these by-laws are based on corresponding requirements dating back to the Act of 1894, and in some cases to that of 1855. The horizontal checks referred to are generally in the nature of an "arch or floor." It is evident in the older legislation the arch orv aulted construction was mainly contemplated, whereas the new by-laws, while mentioning the arch, are framed with a view to the more modern construction in concrete.

The by-laws specify three different horizontal fire checks, namely:—

(1) "Brick, stone or other incombustible material not less than 5 in. thick in the aggregate."

(2) "Fire-resisting materials"; and

(3) "Three inches thick either of concrete pugging . . . or . . . other solid incombustible material . . . the underside ceiled . . . with lath and plaster . . ." or "asbestos cement or similar sheeting."

"Fire-resisting materials" (2) is defined in the First Schedule to the London Building Act, 1930, as follows:—

"In the case of floors and roofs—brick, tile, terra-cotta, or concrete . . . not less than 5 in. thick in combination with iron or steel."

At first glance this may appear to be much the same as the construction described in (1), namely, "brick, stone or other incombustile material not less than 5 in. thick." The Council, by special resolution, has added to the First Schedule, however, under Part III of that schedule, hollow floors (under specified conditions) in which the material above the void may be from 2 in. to 3 in. thick (according to the width of the void) and the soffit of the void (exclusive of plaster) not less than ¾ in., subject to the sum of the thicknesses being not less than 3 in.

Three-inch solid reinforced concrete floors have also been added to the schedule, one of the relevant conditions being that the clear unsupported span of the slabs shall not exceed 18 in.

It will be seen, therefore, that the requirements of (1) and (2) are not the same, but that whereas where 5 in. of incombustible material is specified, 5 in. it must be, where "fire-resisting material" is demanded; then by virtue of the special resolutions mentioned, the original requirement of 5 in. may be reduced (subject to relevant conditions) to 3 in. of incombustible material.

By-laws Nos. 137 and 139 relate to arches and floors of "brick, stone or other incombustible material not less than 5 in. thick in the aggregate." The specification is evidently based on the wording contained in the First Schedule to the Act of 1930—II (4) (*a*), to which the addition of the words "in the aggregate" is much in the interests of clarity. The bald requirement of "not less than 5 in. thick" in the schedule has proved in the past a ground of dispute as to whether the words are intended to imply a single thickness of 5 in. or whether it may be made up of more than one thickness provided the thicknesses of solid material were 5 in. in the aggregate. As to the wording of the new by-law, there is no room left for doubt.

By-law No. 137 specifies "the construction for every

(*a*) Arch or floor being a party structure" (that is, separating storeys or rooms approached by distinct staircases or separate entrances from without).

(*b*) "Arch or floor which is either over any passage leading through or under a building or part of a building to premises in other occupation or over any public way."

The foregoing paragraph (*b*) is evidently taken from the corresponding Section 77 of the Act of 1930, and in consequence the wording is somewhat involved, so that it is not altogether clear to what the last four words—"over any public way"—relate. Reference to the wording, however, of Section 71 of the Act of 1894 or Section 24 of the Act of 1855 shows that the original reading was the "arch or floor over any public way."

Section 77 of the Act of 1930, in imitation of the earlier Acts, gave detailed requirements as regards construction in the case of an arch of brick or stone, and required a thickness of at least 8½ in., evidently contemplating as a minimum a two-ringed arch. When other incombustible materials were employed in forming such an "arch or floor" no detailed requirements were made, but the manner of the construction was left to the discretion of the district surveyor.

In this case (as in all cases) the overriding master by-law No. 2 must always be borne in mind. All loads must be safely sustained and transmitted without exceeding the specified stresses, and although 5 in. of incombustible material is now regarded by the by-law as sufficient for fire-preventive purposes, that dimension is a minimum and must of necessity be exceeded where stability so requires.

By-law No. 139 demands a similar horizontal fire check in the case of:—

"(1) Every arch or other construction under any passage leading to premises in other occupation."

"(2) Every arch or other construction under any public way or intended public way (other than a passage leading to premises in other occupation)," or, in short, every arch or other construction under any passage or any public way or intended public way.

In this case the by-law confers on the district surveyor discretionary powers in regard to the determination of the loading on such structure to be taken into account in calculating the stresses therein, thus implementing by-law No. 2.

A proviso is added in the case of (2)—constructions under the public way—permitting the use of pavement lights in any such construction.

(Of course, in the fixing of pavement lights and suchlike work in the public way it must be remembered that the borough council concerned will probably be interested.)

The foregoing by-law is comparable with Section 78 of the London Building Act, 1930, which is in general agreement with Section 72 of the Act of 1894, and Section 25 of the Act of 1855, in all of which Acts, where the arch was formed of brick or stone, it was required to be 8½ in. thick for a span of anything up to 10 ft., and 13 in. where the span was between 10 and 15 ft. When the span was greater than 15 ft. or the structure was otherwise than an arch of brick or stone, the whole matter was left to the discretion of the district surveyor.

It will be seen, therefore, that the new by-law differs in principle from previous legislation in that the old laws attempted to legislate for stability as well as fire-resistance in arches up to 15 ft. span, whereas the new by-law gives a general minimum thickness for fire-preventive purposes and leaves the question of stability in all cases to the district surveyor's discretion.

By-laws Nos. 140 (*a*) and 144 (2) demand that (*inter alia*) the floors therein specified shall be "of fire-resisting materials." The floors so specified in by-law No. 140 (*a*) are those in any building over 25 squares in area or over 125,000 ft. cube, constructed or adapted to be tenanted by different persons. In such a case, not only must the floors be of fire-resisting material, but they are required to be supported on fire-resisting material.

By-law No. 144 (2) relates to a building of over 10 squares in area where part is used for trade or manufacture and part as a dwelling-house. Any floor separating such parts is required to be of fire-resisting material; but in this case the by-law does not explicitly require the supports of such a floor to be of fire-resisting materials.

Section 80 (3) of the Act of 1930 required floors of fire-resisting materials in a building of over 25 squares in area "containing separate sets of chambers or offices or rooms tenanted or constructed or adapted to be tenanted by different persons." The specification of the uses of the building in question was not always satisfactory as the term "rooms" was capable of a restricted or a wide application and furnished grounds for dispute. In omitting all reference to the purposes of the building, by-law No. 140 (*a*), by being less specific, makes the rule definite. The origin of the inclusion in this by-law of buildings "of which the cubical extent exceeds 125,000 cu. ft.," will be observed later in considering the requirements with regard to the general use of fire-resisting materials. The requirements with regard to floors of fire-resisting materials in by-law No. 144 (2) are couched in the same terms as are employed in Section 80 (2) of the Act of 1930.

By-law No. 141 (3) is the only by-law requiring a pugged floor (3), and relates to a building in which there is a garage or stable separated from any room used for an office, factory, workshop, or habitation, by a floor where such floor is not a "party structure." When the floor is a party structure its construction will naturally be covered by by-law No. 137, and will, therefore, consist entirely of incombustible material not less than 5 in. thick in the aggregate. In the majority of cases the garage or stable will be approached by an entrance separate from that to the other parts of the building, and the separating floor will be a party structure, and the matter of the pugged floor will not arise.

This by-law is derived from Section 75 (3) of the Act of 1930, which was in turn practically a re-enactment of Section 70 (*e*) of the Act of 1894 and related only to habitable rooms over stables. It has already been noticed that this enactment had been modernised by the inclusion of the garage in the requirement. It has also been brought into line with modern conditions in respect of that part of the building from which the garage or stable is to be separated, by extending the "habitable room" of the old Acts to "a room used

for the purpose of an office, factory, workshop or workroom, or for habitation."

The by-law, however, resembles the previous enactments in that it contemplates floors of ordinary timber construction and does not envisage such alternatives as filler-joist floors, hollow tile floors, or reinforced concrete. While with the possible exception of hollow tiles these might be admitted as coming within the category of other solid incombustible material, their use would be hampered by the further requirement that the floor must be ceiled, in the case of the garage, with " asbestos cement or similar sheeting," the attachment of which to the soffit of a concrete floor (for instance) would present difficulties.

In practice, however, the by-law would not be likely to cause serious inconvenience to the constructor who desires to employ some form of fire-resisting floor other than the timber floor with pugging. In the event of the proposed floor being of an aggregate thickness of 5 in. and the vertical separation being in compliance with by-law No. 137, in all probability the district surveyor would be prepared to regard the floor as a " party structure " in the light of the definition of that term in Section 5 of the Act of 1930. In any case, there is always the council's power of modification or waiver under Section 9 of the Act of 1935, and it is improbable that any alternative construction such as those instanced would be regarded as inferior as a fire-check to a pugged floor, even with a ceiling of asbestos cement sheeting nailed to the joists.

(To be continued.)

DECENTRALISATION AND SATELLITE TOWNS

A MEMORANDUM on this subject was presented by Professor S. D. Adshead, M.A., M.Arch., F.R.I.B.A., at the National Housing and Town Planning conference held recently at Harrogate. From this we take the following extracts:—

National planning, the distribution of industries, and the expansion of towns are problems that become increasingly acute and more of a menace to an orderly existence, as town and country planning emerges from the state of theory to enter the state of practice, and as statutory planning becomes the controlling factor in the development of towns.

" National planning " will never make headway until more study is given to the " instability of towns." From a comprehensive study of the distribution of industries as we find them scattered around London, it is seen that social conditions and the possibilities of finding labour have provided the most important factors in the selection of sites.

The Heavy Industries.

Efforts to stabilise industry have, during the last half century, proved quite hopeless. Industry has followed the course demanded of it by unforeseen social and other changes, by the development of transport, and by the constant application of new inventions. The heavy industries, such as mining and shipbuilding, the manufacture of cement and, to a less extent, the manufacture of steel, are necessarily firmly anchored. Moreover, heavy industries that depend upon their proximity to a port, such as those connected with the reducing of crude oils and the storage of timber, are practically immovable. It is the applied industries and those connected with the manufacture of light articles which, in planning, it is so difficult to locate.

When we see a great motor industry established in Oxford, and a huge trading station at Slough, we realise that without planning control some quite unaccountable—and perhaps accidental—factor might bring a large industry into being anywhere, and at any time. It is not so well recognised as it should be that the new development of industry in London is to a large extent due simply to what may be described, when speaking of England as a whole, as " the lure of London "—the attraction of the Metropolis, its amenities, and its proximity to recreative towns in the south. This, perhaps quite unconsciously, has exerted a profound influence not only upon the operatives but also those heads of firms responsible for the selection of sites.

It is perhaps an attraction to a firm setting up a new business to go to a district where labour is plentiful but disorganised. The highly organised operatives in the north, with their insistent demands for improved conditions, have been largely responsible for firms like Dorman Long setting up a branch of their great undertaking in Kent. It is generally assumed that this was on account of the discovery of coal in that part of England: this was certainly a factor, but the social aspect was equally important. Again, the industrial towns in the north of England are cluttered with out-of-date factories, warehouses and old-fashioned machinery, a fact which seems to show that unless an industrial town keeps in the van of progress and destroys as rapidly as it creates, it will become obsolescent.

It seems necessary to review some of these wider issues in the distribution of industry before considering the problem of satellite towns, for, after all, the satellite town which we envisage should have its own industries, live its own life, and be dependent on the parent city only for specialised requirements. There are many towns within a radius of 40 miles of London which are essentially nothing more than dormitory towns for the London worker. We can hardly describe these as satellite towns. All exponents of the principle of developing London by the building of such towns, instead of by allowing development to take place by a continuous spread, will agree that Welwyn Garden City is the model satellite town. If we adopt this principle of development, where shall we place these new towns around London?

In Essex there are no suitable sites to the south of the Southend road. Further north we should need to keep outside a line drawn through Brentwood, Chigwell and Waltham Abbey. In Hertfordshire we must keep to the north-east of Welwyn Garden City and St. Albans, and outside a line drawn round St. Albans, Hemel Hempstead, Watford, Beaconsfield and Slough. On the south we must keep well outside Slough, Windsor, Chertsey, Leatherhead, Dorking and the North Downs. It will thus be seen that any new satellite towns, to have that separation which is essential to their character, would need to be placed a considerable distance outside London. There will also be the great problem of preserving open the interstices still remaining between the limbs of the built-up area. Thus, the problem of where solid London may continue to expand, and where open spaces should be retained, is almost as insistent as the building of satellite towns.

The Green Belt.

The preservation of a green belt, undertaken by the Home Counties with the assistance of the London County Council, is an excellent contribution, but it is not enough; there are still wide areas of agricultural land within the radius of the green belt which a well-thought-out plan for London might find convenient to develop for a variety of uses not generally included in the statutory plan. Amongst such might be mentioned sites for institutions with surrounding open spaces, market gardens, nurseries, large blocks of communal dwellings amply surrounded with large gardens and recreative areas, athletic grounds for the central area, as at Chiswick and Hackney, and perhaps camps for elementary part-time military training.

But to return to satellite towns. There is a tendency amongst their advocates to consider the subject too much in the abstract. It is well to give some rein to the imagination, for in actual practice satellite towns will necessarily vary in their constitution, which will be affected both by the peculiarities of their location and also by their accessibility to London. The main issue to be kept in mind is that they must be distinct and separate units so that they may have an individuality and an entity entirely their own. That is why they must necessarily be situated at some distance from the parent city and be something more than suburbs. With electrified railways and trunk roads in every direction, their actual distance from the parent city—as the crow flies—will not be a matter of the first moment.

To ensure separation, each must have its agricultural or green belt. It is not enough that it should be temporarily separated from adjoining developments merely by unrestricted or even restricted agricultural land. We cannot have satellite towns without the introduction of new legislation framed to regard the interests of the community as coming before those of the individual. It is here that the stumbling-block is likely to be found. Such legislation must provide for the pooling of interests on the lines suggested by Sir Gwilym Gibbon, Sir Raymond Unwin and many others, but which have so far appeared too difficult of operation when the drafting of an Act of Parliament to provide for such procedure has been attempted. Moreover, the issue is undoubtedly hampered by a constant attempt to protect the interest of the individual even when it means, as it so often does, injury to the community as a whole.

Size of Satellite Towns.

Much consideration has been given to the size of a satellite town. This must depend upon such factors as the size and situation of the parent city, the natural confines of the area selected, and also the nature of the industries best suited to its location, its distance from London, and its separation from adjoining towns. These are, in the main, physical factors, but there are also the social factors—those which go to the making of a community. To succeed in this field means that the new community must be of such a size that at least half the inhabitants have a nodding acquaintance with the other half, that all except the stay-at-homes are known to one another, and that there are sufficient people in every class to be able to group themselves into contingents sufficiently large to support every kind of organisation, recreative, social, religious and charitable. This means roughly a population of 20,000 at least, but there would seem to be no particular reason why, in some satellites, the population might not attain 60,000 to 70,000.

It has been pointed out that to make such a town successful, it must be, in the first instance, a little undemocratic where the interest of the community is concerned; this must be the attitude of the authority where not only the zoning but also, for instance, where the selection of shops is concerned. Nothing is worse for a community than to see shopping interests destroyed by unreasonable and unnecessary competition, and on the other hand nothing is worse than a monopoly. Leaving it to the decision of the Town Planning Authority, generally not more than two shops selling the same goods should be permitted, and in these days of " stores " it would not be unreasonable to allow entry of at least two or three such houses.

As regards industries, a railway connection is not necessary, and rarely desirable. The provision of a group or groups of factory units, which can be let off for short periods, in the main, for the experimental beginnings of an industry, is one which seems to have had success in recent years, and might be encouraged and developed. But there will be no satellite towns until the Government recognise that a " satellite town " is not a " housing scheme," and that to provide capital for the building of a satellite town is to provide one of the best investments for national funds.

AIR RAID PROTECTION INSTITUTE

A.R.P. IN INDUSTRY

SOME constructive suggestions for the adaptation of industrial buildings to A.R.P. requirements were made recently by Mr. Frank Cox, L.R.I.B.A., M.I. Struct.E., F.A.R.P.I., when he read a paper, "A.R.P. in Industry," before a general meeting of the Air Raid Protection Institute at the Royal Society of Arts, W.C.2.

Mr. Cox, in the course of some introductory remarks, said:—Experience has shown that the percentage of casualties from a direct hit is small compared with the casualties due to concussion following blast, falling debris, splinters, panic, etc., and in view of this it can be accepted that without Government aid few industrialists will find it commercially, or in other ways, possible to provide stronghold accommodation within their buildings to keep their workpeople free from a direct hit. What must be done, however, is to provide a certain measure of protection for personnel and important objects, and if this is achieved by means of shelters it will give a high degree of safety to those concerned within the buildings.

Let us deal with the structures of buildings as we know them to date, and, firstly, those which are designed on lines similar to the regulations as set down in the London Building Act, 1894. They are buildings of heavy brick construction which support the external bays of floors, some of which are of wooden and others of brick or mass concrete construction. Internally these floors are often supported by non-continuous wood or cast-iron columns, and topped with highly combustible wooden roofs. There is no degree of security in these buildings as they stand, and no reliable or commercial means of adaptation to give a high degree of security. It therefore appears essential that where industries are housed in buildings of this class external shelters or trenches readily accessible to the building must be relied upon, and where this measure of protection is impossible there appears no other alternative but actual evacuation.

Modern Buildings.

The modern type of factory, constructed since the War, and generally similar to the regulations as foreseen in the 1909 Building Acts, consists of multi- and single-storey structures with the framework of structural steel or reinforced concrete.

Single-storey buildings predominate to a great extent, and whereas they are safer than a multi-storey building from the effect of blast, they cover a wider area and, consequently, are more vulnerable to a direct hit. Further, they give no protection against direct hits of incendiary or gas bombs. The walls could, in an emergency, be strengthened by sandbagging to guard against the effects of blast, but they will still be open to the danger of the collapse of the room. In an emergency wide, open single-storey buildings could be divided into compartments, but with layouts as at present in factories this will be serious from the production point of view.

The 1909 Act foresaw the erection of multi-storey buildings in more or less a monolithic form, framed in either steel or reinforced concrete. In many cases framed buildings have a glass roof in order to obtain maximum light to the top floor. Such roof should be taken off and reconstructed for greater safety, or, alternatively, the top floor must always be considered vulnerable to damage and its floor relied upon to detonate incendiary and gas bombs. In certain cases the ground floor could be converted into a shelter if sufficient support is given to the floor over, and the external walls be strengthened by sandbagging or other means, and, further, damage may be confined to certain areas if internal dividing walls are constructed. A further degree of safety could, however, be provided by gas- and splinter-proof shutters to these windows. The danger to personnel within these buildings is still great, and alternative protection should be given externally by means of trenches or galleries, unless by arrangement with a number of the owners some proper form of permanent communal shelters could be constructed.

Each new building which comes into being without structural A.R.P. in view, or without means of shelter for the workpeople and essential departments, represents a wasted opportunity to achieve at little extra cost in the first instance that which, when done in times of panic, means very considerable extra cost and far less protection. Precautions should be taken in all new buildings which could be made completely effective in a time of emergency.

Whilst it must be realised that ideal A.R.P. buildings, if carried 100 per cent. into effect, may make the proposition an uncommercial one, so far as many industrialists are concerned, it is necessary to pronounce a series of standards for buildings which might form the basis for design under A.R.P. We will take as a basis the theory that protection should be given for a 500-lb. high explosive bomb bursting 50 ft. away, as well as direct hits from normally weighted incendiary and gas bombs.

To deal first with the single-storey structure, the chief trouble is the usual glass roof covering, but this can, to a great extent, be overcome if one adopts a design with vertical north-lights and reinforced concrete south slopes to the roof. For added strength to the south slopes they can be constructed in a series of wide corrugations. The valley gutters should be constructed in reinforced concrete, and in view of the fact that they come generally immediately over the valley girders, we obtain a heavy form of construction for detonation. Wired rough cast glass or some form of patented splinter-proof glass should be adopted, but even this is going to be ineffective against the effect of high explosive bombs, although the damage from shattered glass should be minimised.

The building should be of the framed type with the wall construction similar to that in multi-storey buildings, bearing in mind that side lights in walls of single-storey buildings are not necessary for any purpose, either in good times or bad.

So far as multi-storey structures are concerned, they should be designed in the form of framed buildings, either in encased steelwork or reinforced concrete. The roofs should be of slab construction, at least 5 in. thick, and stronger if the roof is to be used as a reservoir for water. The framework generally, particularly the floors, must be designed to a greater factor of safety to withstand the added stresses to which they will be put in times of emergency, but a standard for this is difficult to establish, as it may vary in each individual case.

Design of Floors.

Floors must be designed against an upward as well as a downward pressure, and all junctions of members be reinforced additionally to stand the extra stresses. The cost of this may be thought to be considerable, but when it is realised that a 33⅓ per cent. increase in strength means only somewhere between 15 per cent. and 20 per cent. extra on the cost of the carcase, and that the carcase so often represents only about 25 per cent. of the cost of the complete building, the actual extra cost on the building is only a matter of something less than 5 per cent. in such cases.

Where risk of direct hit is slight, as with industrial plants built in detached sections in open districts, a framed building with the walls monolithic with the frame and of sufficient strength and thickness to resist the blast and splinters is preferable. Where buildings are more closely spaced in towns and cities, the safety-valve type would be more suitable as risk of a direct hit is greater. The cill level of the steel sashes should be as high as the particular industry will allow, whilst the sashes themselves should be protected by means of gas- and splinter-proof shutters. Ordinary internal partitions should be of such a nature as not, in the event of collapse, to create dust in the neighbourhood of delicate machinery, and it is preferable to use either wood or steel sectional-framed partitions for departmental subdivision.

The building should have its lowermost floor at least 8 ft., if not entirely, below ground, to act as a shelter in times of emergency. If it is partially above ground with mezzanine windows running all round, it can be put to far more use than otherwise, and in this connection windows just above ground, if properly protected, are no more dangerous than windows below ground when lighted by areas.

The floor immediately over this lowermost floor should be designed to stand a live load of at least 400 lb. per square foot over and above its normal working load. In addition, the slab itself should be designed to resist the punching effect of a point load of 20 tons acting over a circular area of 10 in. diameter. The floor above should be designed for 200 lb. per foot super above its working load, and the floors over 100 lb. These figures are intended to give guidance for normal structures and should not be used indiscriminately.

A building designed on the foregoing lines should give reasonable protection in the lower floors to workpeople from the effects of a direct hit from a light type of high explosive bomb. Heavy machinery, safes or heavy water tanks should, as far as possible, be placed over one another in one part of the building and not over the shelters. A combined system of heating and ventilation can be maintained by means of the ordinary unit heaters, consisting of those of the fresh air intake form, as well as recirculators, and the former can be so constructed as to be fitted in case of emergency with gas filters.

The modern tendency is to obtain wide open floor areas so far as fire regulations will allow. This is ideal in times of peace, but may, as before stated, be disastrous in times of war. Whilst it is commercially impossible to advocate the dividing up of areas into permanent small compartments, I do feel that industrialists should consider the grouping up of machinery and operations, so that in time of emergency departments could be formed with less inconvenience to the working of the factory, and for this purpose main beams in multi-storey buildings should be designed for additional loads from dividing walls.

With regard to roof coverings, the disastrous effect of some forms of gas on asphalt is well known, but chemists have produced bitumastic asphalts which, it is claimed, will stand up against the effects of gas as it is now known, but should these fail we can still use the somewhat more expensive form of covering the ordinary asphalt flat with a type of vitreous tile bedded in cement as a protective measure against gas.

Shelters.

To deal with the question of shelters just so far as their provision in industrial buildings is concerned, central service control, ambulance rooms and important document stores should be housed in a stronghold, whilst shelters should be provided for the greatest number of workpeople who will be on the works at the same time, bearing in mind double numbers at change of shifts. In considering the position and construction of a shelter, one would first of all investigate the surrounding land, and if hillsides are available they can be mined to stand up against even direct hits. If the shelter has to come within the building one must of necessity consider its value in times of peace, but it should be outside the range of heavy machinery, water tanks, sprinkler mains, services and boiler-house.

Generally speaking, a multiplicity of small shelters for not more than 50 persons is preferable to one large shelter. They should also have sufficient entrances to allow easy and quick access from the various parts of the works.

OBITUARY

Walter F. Cave, F.R.I.B.A.

It is with regret that we record the death on Saturday, January 7, at the age of 75, of Mr. Walter Frederick Cave, F.R.I.B.A., of 15, West Eaton-place, S.W.

The son of Sir Charles Daniel Cave, first baronet, of Sidmouth, Mr. Cave was educated at Eton and the Royal Academy School. He was articled to Sir Arthur William Blomfield, A.R.A., and after travelling extensively abroad to study architecture he began practice in London in 1889. His works are indicative of his versatility and include the Aeolian Hall, New Bond-street; the Chappell Galleries and the Orchestrelle Company's premises, New Bond-steet; Messrs. Bechstein's premises, Wigmore-street; a cottage hospital, Sidmouth; an extension to Somerville College, Oxford; the Church of the Nativity, Watlington; the entrance hall to the old Adelphi Theatre; and a number of banks, factories and houses, the latter including "Ewelme Down," Oxfordshire; Littlecourt, Northants; "The Wharf," Sutton Courtenay; and "Bengeo House," Hertford.

Mr. Cave was for many years surveyor to the Gunter Estate, covering a large area in South Kensington, and in this capacity he was responsible for the design of a large estate near North End-road, Fulham, which was an early experiment in controlling the speculative builder. He was also consulting architect to the Whiteley Trust.

A former vice-president of the R.I.B.A., from 1917 to 1921, Mr. Cave had also served on the Council and the Board of Architectural Education. He was a past-president of the Architectural Association, and, being a keen athlete, played a large part in the formation of the Athletic Club of the A.A.

The Late Arthur Keen : An Appreciation.

We have received the following brief appreciation of the late Arthur Keen, F.R.I.B.A. (whose death was recorded in *The Builder*, December 23), from Mr. G. Alan Fortescue, F.R.I.B.A.: The news of Mr. Keen's departure from this modern world brought back to my mind very vividly the very happy days I was privileged to spend with him in his offices at Raymond Buildings, Gray's Inn. I was articled to Mr. Arthur Keen in the year 1908, when he shared offices with the late Mr. Ernest Newton. What a treat it was to be associated with such architects, to be trained by a scholar of Norman Shaw! One always felt in the office that one was doing something worth while, and even if only a pupil, that a future lay ahead under the guidance of such masters of architecture.

Thinking back on our normal life in the office, I can see Mr. Keen, the day's work done, coming into the room from the usual ablution, taking off his glasses, placing them on the mantelpiece, wiping his face with the towel and looking upon my drawing-board with the words: "The drawing must be crisp." I feel that Mr. Keen embodied everything connected with detail, tidiness, law and order. His very sketch-books, which he showed me from time to time, were an example of thorough thinking and hard work, only to be produced by a Fellow of the Norman Shaw school. The training which he gave me has been most beneficial in my practice, and has produced a control very necessary under modern conditions.

Mr. Arthur Keen was a grand master and took me out on many a journey of supervision and measurement, and I can recall him now, discussing with me the possibilities of detail.

He was passionately fond of children, and I remember him talking to them in the 'bus on our several journeys, and it would seem that a loneliness was created within him that he had no child of his own. If I remember aright, he was wont to speak about children in his lectures.

He was the "father" of a staff at Raymond Buildings who loved him for the beauty of his mind, and I feel that all the time he had spent in practice was spent in giving service to other people—he lying in the shadow all the time. On many occasions have I called upon him when I was in practice, asking for advice which he freely gave, and I have seen him doing a great deal of work for the Institute out of love for an ideal.

THE CONTRACTOR'S OBLIGATIONS AND LIABILITIES—XIV

By W. T. CRESWELL, K.C., Hon.A.R.I.B.A., A.S.I., etc., assisted by NORMAN P. GREIG, B.A., Barrister-at-Law.

Completion.

COMPLETION of the works comprised in a building or engineering contract is a matter of fact (see Cunliffe *v.* Hampton Wick Local Board (1893), 9 T.L.R. 378). Nor is it dependent upon the certificate of the architect or engineer (as the case may be) unless it is provided by the contract that such certificate is to be a condition precedent to payment of the contract price. It follows, therefore, that on completion, the contractor is entitled to be paid the balance of the amount due to him under the contract, subject, of course, to any deduction that might have to be made in order to make the work comply with the specification accompanying the contract.

Let it be here mentioned that the term "virtual completion" often used by contractors has no meaning in law, or if it has, it means nothing more than "not completion at all."

Where the lump-sum contract provides that the certificate of the architect or engineer is a condition precedent to payment, then such certificate will not be issued until the work has been completed to the satisfaction of the architect or engineer. In deciding that the work has been satisfactorily completed, the architect or engineer, before giving his final certificate, must decide: (1) whether, if the work to be done was intended to suit a particular purpose it does suit it, or (2) whether it has only to comply with the plans and specifications provided for the contractor.

It follows then that, should a negative answer be given to (1) above, there is no "completion" at all; there has been a complete failure of consideration, and there is no obligation on the employer's part to pay the contractor anything. The contractor can, however, relieve himself of his contractual liability, and even recover the cost of the work, provided he is able to prove that the employer was fully aware of the impossibility of performing the contract work in the way it was intended to be done, and has acquiesced in the way in which the contractor has, in fact, done the work. But this is tantamount to setting up a new contract, the terms of which are that the contract works are to be executed in the manner in which they have actually been carried out.

On the other hand, if the contractor was, under the contract, only liable to complete the works according to the plans and specifications provided, and he does so complete them, there is no liability upon him if it is found afterwards that the works are not suitable for the purpose which the employer had in mind. The contractor has done his part of the bargain and is entitled to be paid for his work.

Sankey, J., in Dakin, H. and Co., Ltd. *v.* Lee (1916), 1 K.B. 566, expressed the law clearly on the obligation imposed upon the contractor with regard to the works comprised in the contract. Said he: "When a builder has supplied work and labour for the erection or repair of a house under a lump-sum contract, but has departed from the terms of the contract, he is entitled to recover for his services unless: (1) the work that he has done has been of no benefit to the owner, (2) the work he has done is entirely different from the work which he has contracted to do, or (3) he has *abandoned* the work and left it unfinished."

Time for Completion.

In most building or engineering contracts (and always in the more formal types) the time for completion is made a term of the contract, and where no definite time for completion is fixed the contractor must complete within a reasonable time. What is "reasonable," of course, will depend largely upon the nature of the particular work contracted for, and might also be affected by many factors existing at the time. It may be, however, that the employer, under the contract, is under an obligation to do certain operations before the contractor enters on the site to begin the contract works. It is obvious, therefore, that any delay in obtaining possession of the site may result in delay in the time of completion for which the contractor is not responsible. It cannot be repeated too often that the employer is under a definite obligation, having entered into a building or engineering contract, to do certain things: (1) he must give possession of the site, (2) he must give facilities to the contractor throughout the contract works, to enable the contractor to proceed with and carry out the works, (3) he must give (usually through his architect or engineer) proper and sufficient instructions to the contractor, and (4) must give facilities, when the work is complete, for the contractor to make good any defects under the defects and maintenance clause.

It should here be made clear that unless the employer (himself, or by his agent) has made specific representations, or given definite guarantees with regard to the nature of the soil, any delay in completion caused by meeting unexpected difficulties during the excavation, for instance, is a matter for which the contractor must be held responsible. It is his business to make as sure as he can of the condition of the site at the outset. Similarly, if a latent defect should develop during the progress of the contract works causing complete or partial collapse of the work, the contractor is both liable in damages to the employer, and must reinstate the building. It was made clear in Bottoms *v.* York Corporation (1892), 2 H.B.C., 4th edn., 208, that where no guarantee had been given or representations made by the employer as to the nature of the soil, the discovery of difficulties after the contract works have been begun does not entitle the contractor to abandon the works. If he does so he is guilty of a breach of contract and must assume the legal consequences of so doing.

But, on the other hand, should the employer, by his own actions, delay the work of the contractor to the extent that he is unable to complete by the time for completion named in the contract, then the employer is liable to the contractor for the delay. Should, however, the employer make default as regards certain things which are conditions precedent to the performance of the contract works, then the contractor may be released from the contract altogether—see Lawson *v.* Wallasey Local Board (1882), 11 Q.B.D. 229. It is clear that in such a case the contractor could proceed against the employer for breach of contract, the measure of damages being an amount which would include the expense to which the contractor had been put in making his preparations for entering upon the contract works.

(*To be continued.*)

SOCIETIES AND INSTITUTIONS

R.I.B.A.

The Final Examination.

The Final Examination was held in London and Edinburgh from November 30 to December 8, 1938. Of the 204 candidates examined, 131 passed (57 of whom sat for and passed in Part 1 only, and one of whom sat for and passed in Part 2 only) and 73 were relegated. The successful candidates are as follows :—

G. W. Armstrong (Pt. 1 only)
V. B. Asbridge.
E. T. Baldwin.
E. V. Barber (Pt. 1 only).
W. Barker (Pt. 1 only).
P. L. H. Bay (Pt. 1 only).
C. Bellinger.
E. L. Bent (Pt 1 only).
J. M. M. Billing.
W. N. Bradford (Pt. 1 only)
B. I. Briggs.
H. J. W. Broadwater.
R. S. Brooks.
B. Buck.
G. Bullimore (Pt. 1 only).
J. G. Burchill (Pt. 1 only).
I. Chaikin (Pt. 1 only).
E. R. Chilton (Pt. 1 only).
R. J. B. Christie (Pt. 1 only).
G. M. Clowes (Pt. 1 only).
G. E. Coburn (Pt. 1 only).
D. C. Colahan (Pt. 1 only).
F. W. L. Collington (Pt. 1 only).
R. E. B. Councell (Pt. 1 only).
R. Cowan.
L. G. Creed (Pt. 1 only).
R. Davies (Pt. 1 only).
R. V. Davis (Distinction in Thesis).
J. Davison.
N. F. Davison.
F. Day.
G. W. Dolbey.
H. Dootson.
A. Dorman.
A. E. Dowsey.
L. Duxbury.
T. W. East.
T. B. H. Ellis (Pt. 1 only).
J. M. M. Evans (Miss) (Pt. 1 only).
W. H. Evans.
G. W. Fairbairn (Pt. 1 only)
G. H. Fairweather (Distinction in Thesis).
P. A. Faulkner (Pt. 1 only)
S. H. Fisk.
H. L. J. Ford.
C. H. Fowler.
A. M. Gear
W. Goodey (Pt. 1 only).
W. K. Graham.
R. P. Gray (Pt. 1 only).
C. L. Griffiths (Pt. 1 only).
C. W. Gummer (Pt. 1 only).
F. E. Hall (Pt. 1 only).
H. D. Hall.
K. Hart (Pt. 1 only)
C. Hayes.
H. T. Hickman.
H. J. Hitch.
H. J. Hobday.
G. H. Hobkinson.
J. C. Holden.
S. M. Holloway (Pt. 1 only).
A. G. Hughes (Pt. 1 only).
A. H. D. Jones.
A. C. Jones.
R. M. Jones.
H. Judson.
L. Kilner.
T. E. J. King (Pt. 1 only).
K. R. Lack (Pt. 2 only).
R. Lambert (Pt. 1 only).
J. A. Lewis.
W. C. Lock (Pt. 1 only).
C. E. Longdin.
J. McClelland (Pt. 1 only).
J. R. McKee (Pt. 1 only).
O. D. G. Manning.
G. H. G. Marriott (Pt. 1 only).
S. B. Marston (Pt. 1 only).
G. M. Maw (Pt. 1 only).
J. P. Milnes-Smith.
H. G. Murphy.
L. C. North.
B. Oram (Miss) (Pt. 1 only).
G. F. Owen.
G. G. Pace.
H. R. D. Perryer.
J. S. Peters.
F. Potter.
H. J. Powell.
J. T. Redpath (Pt. 1 only).
N. T. Rider.
K. R. Rohm.
L. Rossington.
V. F. Russell (Pt. 1 only).
E. C. R. Sandon (Pt. 1 only)
K. H. Saunders.
W. J. Scott.
P. B. Sidebottom (Pt. 1 only).
C. S. G. Smith (Miss).
J. Smith.
R. F. Smith (Pt. 1 only).
W. Smith (Pt. 1 only).
D. Stamp.
J. O. Stevens (Pt. 1 only).
W. C. Taffender.
C. Tarling (Pt. 1 only).
E. H. Thompson.
W. R. Thomson.
C. R. Thorp.
P. Tinto.
C. A. Townsend.
F. C. Vernon.
T. L. Viney (Pt. 1 only).
G. B. Vint (Pt. 1 only).
A. J. F. Vowell (Pt. 1 only)
C. E. Vowels.
A. J. Watkins (Pt. 1 only).
J. F. Watson (Pt. 1 only).
R. J. W. Watson (Pt. 1 only).
D. A. S. Webster.
L. E. Webster.
H. W. Wesley.
C. D. Wheeldon.
J. C. Wilks.
C. G. Wills (Pt. 1 only).
H. F. Wilson (Pt. 1 only).
A. H. Wise (Pt. 1 only).
W. J. Witham.
R. G. Wood (Pt. 1 only).
R. K. Wright.

The Special Final Examination.

The Special Final Examination was held in London and Edinburgh from November 30 to December 6, 1938. Of the 60 candidates examined, 31 passed (eight of whom sat for and passed in Part 1 only, and one of whom sat for and passed in Part 2 only) and 29 were relegated. The successful candidates are as follows :—

W. Alp (Pt. 1 only).
E. L. Ansell.
J. H. A. Baker.
C. K. Brice (Pt. 1 only).
H. W. Callard (Pt. 1 only).
C. H. Fitch.
N. R. Galloway.
A. W. Glover.
M. D. Hancock (Miss).
L. D. Helme.
H. M. Jones (Pt. 2 only).
J. F. Learner.
J. T. Lynch.
M. M. Maitra.
R. D. Manning.
E. D. J. Mathews.
R. G. Meldrum.
A. D. Mitchell (Pt. 1 only).
H. J. Muir.
C. A. Murray.
W. R. Oram (Pt. 1 only).
J. N. H. Platts.
E. K. Preston (Pt. 1 only).
G. W. Rhodes.
E. L. G. Ross.
E. T. Sargent (Pt. 1 only).
G. J. S. Smith.
L. T. J. Smith (Pt. 1 only).
W. Tarn.
F. J. B. Watkins.
G. Watt.

The Examination in Professional Practice for Students of Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination was held in London and Edinburgh on December 6 and 8, 1938. Of the 17 candidates examined, 13 passed and four were relegated. The successful candidates are as follows :—

J. Bannerman.
J. Black.
J. M. Cowie.
G. D. Hamilton.
R. F. Kennedy.
A. T. Lindsay.
W. H. Lindsay.
M. F. Makins (Miss).
H. S. Mark.
W. O. B. Morrissey.
J. T. Reid (Junior).
J. R. C. Rowell.
C. P. Thesiger.

Intermediate Examination.

The R.I.B.A. Intermediate Examination was held in London, Belfast, Hull, Manchester, Newcastle and Plymouth, from November 18 to 24. Of the 219 candidates examined, 88 passed and 131 were relegated. The successful candidates are as follow :—

B. C. Adams.
J. B. Anderson.
S. H. Bates.
K. M. Baxter.
J. D. Blacklock.
A. W. Bowman.
R. S. Brindle.
S. Broome.
J. C. Brown.
K. D. Bundy.
P. F. Burgoine.
J. E. Carney.
C. E. N. Carter.
G. E. Carter.
L. Chandler.
E. J. Cheeseman.
Miss H. M. Cole.
F. W. T. Croydon.
H. L. Dawes.
E. W. Draper.
J. Dryburgh.
F. P. Edmed.
J. E. G. Edwards.
M. England.
J. R. Findlay.
B. R. Flury.
R. W. Ford.
F. Forrest.
E. S. Fowkes.
N. Havers.
G. C. Haydon.
G. H. Haynes.
A. C. S. Hickes.
F. R. Huggins.
M. H. Hutchinson.
G. R. Ingleby.
L. Jeffery.
P. Kent.
J. C. Kenyon.
S. Kershaw.
J. K. Kirkham.
C. A. Kitchen.
R. J. Lane.
C. T. Larrington.
C. A. Legerton.
F. H. Lloyd.
V. H. Loney.
G. K. McKnight.
S. J. McMullon.
W. C. McVeigh.
D. J. Maguire.
L. Mallinson.
A. E. Matthews.
G. S. Melland.
E. J. Miller.
J. Mitchell.
C. P. Moon.
G. W. Nightingale.
A. B. Owles.
G. M. Pearson.
A. Petty.
T. L. Rampton.
K. H. Roberts.
J. Scott (Jnr.).
R. Silkstone.
T. Sims-Hilditch.
A. E. Smith.
H. S. Smith.
R. V. R. Smith.
D. Snidall.
F. L. Southey.
J. C. O. Stansfield.
E. Taylor.
L. J. Terry.
C. M. Thompson.
K. J. Thompson.
S. L. Towler.
V. A. Tregoning.
P. D. Tugwell.
F. H. Vaughan.
J. L. S. Vincent.
C. J. Wallis.
R. St. G. Whelan.
J. Wilkinson.
L. P. Williams.
H. E. Wilson.
F. W. Young.
L. Young.

Intermediate Examination: Revised Syllabus.

The R.I.B.A. has issued a revised syllabus for the Testimonies of Study for the R.I.B.A. Intermediate Examination which will come into operation on January 1, 1940. All candidates submitting Intermediate Examination Testimonies of Study to the R.I.B.A. before the end of 1939 must comply with the existing syllabus. Candidates submitting Intermediate Examination Testimonies of Study on and after January 1, 1940, must prepare their Testimonies of Study in accordance with the revised syllabus.

INSTITUTION OF STRUCTURAL ENGINEERS.

Membership.

The following have been elected to membership :—

As Students : S. T. Lawrence, London; J. E. C. O'Donnell, Loughborough; A. A. Persse, London; D. E. Shinn, Stafford.

As Graduates : R. G. N. Barlow, London; G. Birchby, London; B. T. Boswell, Gravesend, Kent; N. L. Costain, B.Sc., London; B. B. Erdekian, Jerusalem; R. G. Timms, London; H. Waye, London.

As Associate Members : M. Ananthanarayanan, Siddamalli, India; J. J. Bentley, Bolton, Lancs; S. V. Gardner, East Molesey; V. E. William Stewart, B.Sc., Rangoon; J. P. Latham, Birmingham; W. B. McLauchlan, B.Sc., A.M.Inst.C.E., Bombay; W. F. White, A.M.Inst.C.E., Middlesbrough.

As Associates : C. A. R. Eslick, Liverpool; R. H. Radburn, London; R. J. Sayle, Johannesburg; L. T. J. Smith, L.R.I.B.A., London.

As Members : J. E. Biglin, M.Eng., A.M.Inst.C.E., Hull; L. T. Broome, Washington, Co. Durham; D. V. Buck, A.M.Inst.C.E., Surbiton, Surrey; C. E. Cannons, London; G. H. Farleigh, B.Sc., Rangoon, Burma; E. A. Harmes, Hove, Sussex; W. F. Hedges, O.B.E., F.R.I.B.A., Fiji; E. R. Knight, M.Eng., A.M.Inst.C.E., A.M.I.Mech.E., London; H. W. Newell, London; M. A. Rauf, B.Sc., Delhi; F. A. Wastell, Petts Wood, Kent; D. S. Wishart, A.M.Inst.C.E., Kirkcaldy; G. C. Wright, Twickenham.

COMPETITION NEWS

New Civic Centre, Margate.

The conditions of the open competition for a new Civic Centre, Margate, for which Mr. A. F. B. Anderson, F.R.I.B.A., S.A.D.G., has been appointed assessor, will shortly be available.

Newcastle Town Hall.

Sixty-seven designs have been received from architects for the new town hall to be erected at the cost of £450,000. Mr. Verner O. Rees, F.R.I.B.A., is expected to make his award about the end of this month.

A Fire Station, Feltham, Middlesex.

The Feltham Council's surveyor has prepared two alternative layout schemes for a civic centre. The Council has decided to adopt in principle a part of the scheme relating to the erection of a fire station and A.R.P. report centre on the site of Nos. 1 and 3, Hanworth-road, and to offer a premium for a layout of the site.

Public Swimming Baths, Halesowen.

Halesowen Town Council are to invite architects to submit competitive designs for the erection of central covered-in public swimming baths on the Finger Post site and also on land in Stourbridge-road. Premiums of £100, £50 and £25 are to be offered.

CURRENT COMPETITIONS

	Particulars published in "Builder,"	Sending in date
Rebuilding of St. George's Hospital, for the Governors. Messrs. H. J. Lanchester and T. A. Lodge, F.F.R.I.B.A., assessors, assisted by Mr. G. A. Codd. Premiums: £500, £300 and £200. Conditions (dep. £2 2s.) from the House Governor, St. George's Hospital, S.W.1.	Jan. 14	Jan. 14
Senior School, Broom Hall, Shrewsbury, for Shrewsbury Corporation. Mr. C. Cowles-Voysey, F.R.I.B.A., assessor. Premiums: £200, £150, £100. Conditions, etc. (dep. £1 1s.), from the Town Clerk, Guildhall, Shrewsbury. Questions by Sept. 10	Aug. 5	Jan. 30
New Municipal Offices, Bedworth, for U.D.C. Mr. S. N. Cooke, F.R.I.B.A., assessor. Premiums: £50, £25 and £15. Conditions, etc. (dep. £1 1s.) from Mr. Maurice Armson, F.C.R.A., Clerk of Council, Council Offices, Bedworth. Questions by Oct. 31	Sept. 25	Jan. 31
Proposed Municipal Buildings, Godalming, for Borough Council. Mr. Stanley C. Ramsey, F.R.I.B.A., assessor. Premiums: £200, £150 and £100. Conditions, etc. (dep. £1 1s.) from Mr. A. P. V. Moon, Town Clerk, Town Clerk's Office, Godalming. Questions by Oct. 31	Sept. 23	Jan. 31
New General Police Headquarters, Hutton, for Lancs Standing Joint Committee for Police. Sir Percy Worthington, F.R.I.B.A., assessor. Premiums: £500, £400, £300. Conditions from Mr. G. Etherton, Clerk of the Peace, County Hall, Preston, Lancs (dep. £3 3s.).	Nov. 4	May 1
Proposed Supreme Court, Lagos, for Government of Nigeria. Mr. A. F. B. Anderson, F.R.I.B.A., S.A.D.G., assessor. Premiums: £500, £300, £200. Conditions, site plans (dep. £1 1s.) from The Crown Agents for the Colonies, 4, Millbank, London, S.W.1. Questions by Feb. 14	Dec. 23	June 30

LAW REPORTS

COMPULSORY PURCHASE OR DEMOLITION ORDER METHODS UNDER HOUSING ACT, 1936.

COURT OF APPEAL.

Before LORDS JUSTICES SLESSER, MACKINNON and FINLAY.

Re Housing Acts, 1925/1936.
Re Brighton (Everton-place Area) Housing Confirmation Order, 1937.
E. Robins and Son, Ltd. v. Minister of Health.

In this case Messrs. E. Robins and Son, Ltd., brewers, of Brighton, appealed from the judgment of Mr. (now Lord Justice) du Parcq in the King's Bench Division refusing to quash an order granted to the Brighton Corporation by the Minister of Health, the order in question giving the Corporation power to purchase compulsorily property in Everton-place, on the western boundary of the borough and about 300 yards inland.

Mr. Trustram Eve, K.C., and Mr. Geoffrey Lawrence appeared in support of the appeal; and Mr. Valentine Holmes represented the Minister of Health.

Mr. Trustram Eve said that the Brighton Corporation had declared the area to be a clearance area and had made a compulsory purchase order. The Housing Act, 1936, gave them power to make a purchase order or a demolition order, and the question now raised was whether under section 25, sub-section (3), of the Act they had a complete and unfettered discretion, as a matter of policy or politics, to decide whether to use the compulsory purchase or demolition order method. His (counsel's) contention was that in deciding that question they must have regard to the position of the owner of the property, so as to act reasonably and to do as little mischief to the property owner as possible.

The appellants bought the property, which the Corporation had decided to acquire, for the purpose of extending their brewery, and their fear was that the Corporation, having purchased the property at a reduced price under the statute, might later want a considerably advanced price if it was decided to sell it back to the brewery. The Corporation, he contended, had no regard for the rights of the owners in making the compulsory purchase order, but proceeded as a matter of policy. That, he submitted, was *ultra vires* the powers of the Act and therefore illegal.

Mr. Valentine Holmes supported the decision of Mr. Justice du Parcq when Lord Justice Mackinnon asked if the effect of the Act was to permit the Corporation to acquire the property for £1,000 and sell it back to appellants for £1,500.

Mr. Holmes replied that that was the effect of the Act, but said that in practice it would not happen.

Lord Justice Slesser said he gathered that if the Minister was satisfied that that was the intention he could refuse to confirm.

Mr. Holmes : Yes.

Lord Justice Slesser said he did not think it must be assumed against the Corporation that they were going to perform such a nefarious act.

Lord Justice Mackinnon said he had not suggested it.

Mr. Holmes said there was no shadow of justification for any suggestion that the Corporation intended to buy and then re-sell to the appellants at a greatly enhanced price. It was not as though the Corporation were doing anything extraordinary in this case. It was the settled policy to proceed by way of compulsory purchase orders. Where a public authority had the money it was far preferable to acquire and themselves redevelop the site than to order demolition and lease the re-development to somebody else. The Minister saw no objection to the procedure adopted by the Corporation.

Mr. Trustram Eve, in replying, remarked that after the publicity which had been given to the case, no doubt no attempt would be made to extract a greatly increased price from the appellants for the land if it were re-sold to them.

The Court dismissed the appeal.

In giving judgment, Lord Justice Slesser said that the suggestion had been broadly made that the Corporation would attempt to sell the area back to the appellants at an enhanced price; but he did not think there was any evidence on which one was entitled, at that stage, to think that the Corporation would do that; and, further, if that had been shown to be the Corporation's avowed intention, to the satisfaction of the Inspector who conducted the inquiry, it might well have been the case that the Minister would have hesitated to confirm the order.

But all that was irrelevant to what the Court had to consider.

The fatal objection to the argument that the Corporation were obliged to act reasonably, so as not to injure the interests of third parties, was that there was express power given to the local authority to proceed with the clearance of the area by one or other of two methods. The second method was by purchase, and the complaint of injury to the appellants in this case was by purchase, and that was the very thing which the Corporation were authorised to do. The authorities laid down the principle that if a person was authorised to do a specific act he could do it, even though it did cause injury to another.

In the present case the Corporation were specifically authorised to purchase, and the mere fact that that might cause injury to the appellants did not in his view interfere with the discretion they had as to which order to make, subject to the confirmation of the Minister of Health. He was of the opinion that Mr. Justice du Parcq was right in refusing to quash the order and that the appeal failed and should be dismissed.

The other members of the Court concurred.

Leave to appeal from the decision to the House of Lords was refused.

BUILDERS' SUCCESSFUL CLAIM FOR BREACH OF CONTRACT FINANCED BY THE FRENCH GOVERNMENT.

OFFICIAL REFEREES' COURT.

Before HIS HONOUR S. R. C. BOSANQUET, K.C

Kirk and Kirk, Ltd., v. Universite de Lille.

This was an action by Messrs. Kirk and Kirk, Ltd., builders and contractors, of 287, Upper Richmond-road, London, S.W., against the defendants, the Université de Lille, of Queensberry-place, South Kensington, to recover damages for alleged breach of contract and money due for work done.

The material facts of the case sufficiently appear from the following summary of the considered judgment of the Official Referee after a hearing of the evidence lasting several days.

He said that at the beginning of 1935 the defendants were desirous of erecting a certain block of buildings in Queensberry-place, S.W., for the use of the Institut Français, and on June 4 of that year a contract, which was generally in the usual R.I.B.A. form, was entered into between the defendants through the Recteur, M. Chatelet, and Messrs. Baffrey-Hennibique, a French firm, for the erection of a block of buildings designed by Mr. Albert J. Thomas, an English architect, for the sum of £96,000. Messrs. Baffrey-Hennibique were, for the performance of the contract, merely a conduit pipe, and the contract as a whole was immediately assigned by them to the plaintiffs. It appeared that at the moment the contract was entered into it was already in the contemplation of the parties that it could not be adhered to as a whole, but that instead, for a portion of the whole, planned by Mr. Thomas, there would be substituted buildings built to the design of M. Bonnet, a French architect. No further contract was entered into with regard to this later work, but it was agreed that it was to be done by the plaintiffs upon the terms and conditions applicable to the original contract. The work under the original contract was to have been completed by September 23, 1935, but owing to alterations there was in fact no final date for completion fixed, and the contract actually dragged on until February, 1938, and was then incomplete. It was common ground that the defendants, who were being financed by the French Government, were continually short of money to pay for the work designed by M. Bonnet, and, in addition, M. Bonnet himself was very dilatory in supplying plans for the work he wanted done.

However, the work went on, though slowly, and the plaintiffs were still on the job with all their scaffolding and plant on February 21, 1938, when the plaintiffs received a letter from Mr. Thomas, stating that he had received a letter from the Recteur, dated February 17, saying that they proposed stopping all the work, including the glazing, and removing all the scaffolding unless the plaintiffs wired to the contrary and stating that the expenses to be paid could not be more than £4,000. It was claimed by the plaintiffs that that letter constituted a repudiation of the contract. It appeared that in April, 1937, the defendants' difficulties with regard to finance were acute, and an arrangement was come to that no further work in addition to that already completed should be undertaken by the plaintiffs without the express authority of the Recteur of the Université. The value of the work then executed was £139,779, and further orders were given amounting to nearly £20,000. Then another gentleman became Recteur, and, having looked into the position of the contract, he became alarmed because, while there was a great deal of work to be done, the money which he was receiving, or had received, from the French Government was limited in amount, and finally he wrote a letter to the architect expressing his grave displeasure at the position which had arisen, and stating that he should not pay the 31st instalment until he had received detailed and accurate proofs of the expenditure.

Continuing, the Official Referee said the question was whether the letter of February 21 was, as the plaintiffs alleged, a repudiation of the contract by the defendants, the latter, however, contending that it was not, as the suspension of the work on the buildings did not necessarily involve the termination of the contract.

He (the Official Referee) said he had no hesitation in holding that in its plain meaning, as read by the ordinary man, it clearly constituted a repudiation of the contract. He held that the defendants had broken their contract and were liable to the plaintiffs not only for the money due to them under the contract, but also for damages for breach of contract.

Under the first head of claim, the plaintiffs were entitled to the sum of £6,745 15s. 11d. and the interest to the date of the hearing, which amounted to £304 18s., making a total of £7,050 13s. 11d.

As regarded the damages for breach of contract, it was agreed that the proper measure was the amount of profit which the plaintiffs would have made if the contract had not been put an end to. He held that the plaintiffs were entitled to the full loss which they had sustained by the defendants' breach of contract.

Mr. Drewery, for the plaintiffs, had estimated that they would have made a profit of £3,209 4s. 5d., while the evidence called on behalf of the defendants said it would not have exceeded £1,715 0s. 8d. He (the Referee) thought that Mr. Drewery's estimate was right, with the reservation that he considered the proper proportion for the overhead charges must be set against that part of the contract. He decided that £465 4s. must be subtracted from Mr. Drewery's total of £3,209 4s. 5d., making the actual figures due to the plaintiffs £2,744 0s. 5d. Adding the two totals together—viz., the £7,050 13s. 11d. and the £2,744 0s. 5d.—that made a total of £9,794 14s. 4d. due to the plaintiffs, and there must be judgment for that amount, with costs.

Counsel for the defendants applied for a stay of execution pending an appeal from the judgment, and after a long discussion the Referee granted a stay as regarded a sum of £3,048 18s. 5d., provided the balance of £6,745 15s. 11d. was paid to the plaintiffs within 21 days and the £3,048 18s. 5d. was

paid into Court within the same period. The costs of the action were ordered to be taxed and paid to the plaintiffs' solicitors on the usual undertaking.

Mr. Miller, K.C., and Mr. E. J. Rimmer appeared for the plaintiffs, and Mr. Macaskie, K.C., and Mr. T. Elder Jones for the defendants.

LABOURER'S SUCCESSFUL APPEAL IN WORKMEN'S COMPENSATION ACT CASE.

HOUSE OF LORDS.

Before LORDS ATKIN, THANKERTON, MACMILLAN, RUSSELL OF KILLOWEN, and WRIGHT.

Harris v. Associated Portland Cement Manufacturers, Ltd.

This case, which raised an important question under the Workmen's Compensation Acts, came before the House on the petition of the applicant, Mr. David John Harris, of Eynsford-road, Greenhithe, Kent, and asking for the reversal of the judgment of the Court of Appeal affirming the award of Judge Konstam, at the Dartford County Court, in favour of the employers, Associated Portland Cement Manufacturers, Ltd., of Portland House, Westminster, S.W.

The material facts of the case were as follows: Mr. Harris, who was employed by the company as a labourer, whilst at work had to stand in water, and as a protection used leggings made of sacking. He and other men in similar employment were allowed to dry these leggings at a revolving fan driven by a turbine so that they could be dry for use the following day. On the day in question Mr. Harris put his leggings so close to the fan that they and his hand were drawn in, and his hand had, as a consequence, afterwards to be amputated.

In these circumstances Mr. Harris applied for compensation under the provisions of the Workmen's Compensation Acts, and the application came before Judge Konstam, who held that Mr. Harris was not entitled to an award, as he had, as the Judge said, acted with extreme rashness in putting his leggings so close to the revolving fan, and that there was nothing in his contract which obliged him to have done what he did.

From that result Mr. Harris appealed to the Court of Appeal, which affirmed the decision of Judge Konstam. Hence the present petition to the final tribunal.

Mr. Harris's appeal was allowed by a majority of the Law Lords.

Lord Atkin, in the course of his judgment, said that once it had been found that work which a man was seeking to do was within his employment, the question of negligence, great or small, was irrelevant. In his opinion, if a workman was doing an act which was within the scope of his employment in a way which was negligent in any degree and was injured by the risk incurred only by that way of doing it he was entitled to compensation.

Lords Thankerton, Macmillan and Wright delivered judgments agreeing that in the circumstances Mr. Harris was entitled to compensation.

Lord Russell of Killowen delivered a dissenting judgment and in agreement with the decision of the Court of Appeal and the County Court Judge.

The case was remitted to the County Court Judge for the purpose of his awarding compensation to Mr. Harris in accordance with the judgment.

An Announcement.

We are informed that Messrs. Besant and Co., of Orange-street, W., are retiring from further publishing, and understand that Mr. Selwyn Brinton's books in their hands—one of which, "Francesco di Giorgio Martini of Siena," has been noticed in these columns—are being taken over by Messrs. Eyre and Spottiswoode.

BURST WATER PIPES

By A LEGAL CORRESPONDENT.

As the result of a serious epidemic of burst pipes during the recent cold spell, there has been a great deal of controversy in the daily Press (as well as in the market-places) as to the cause of these minor disasters and the precautions that might have been taken to avoid them. Efforts, too, are being made to throw the blame upon someone other than "Jack Frost" himself, hence builders, architects, plumbers and householders have found themselves censured.

It might be interesting, therefore, briefly to consider the statutory requirements regarding the protection of water-pipes from frost, which are expressed within the Metropolis in the by-laws made by the Metropolitan Water Board (under Section 16 of the Metropolitan Water Board Act, 1932), and without the Metropolis, in by-laws made under the Public Health Acts (or under private Acts where the undertakers are not local authorities). As local authorities who are water undertakers have in the main adopted the Ministry of Health Model By-laws, attention will be directed to those known as series XXI.

The provisions of these two sets of by-laws are fairly similar. In the area served by the Metropolitan Water Board, underground pipes, when not beneath a building, must be laid at least 2 ft. 6 in. from the surface of the ground (23), while every pipe laid or fixed in an unprotected roof space must be *properly protected* with insulating material, while every other pipe laid or fixed in an exposed position inside or outside a building must be *properly protected* from frost. No pipe, except where it is unavoidable, must be laid or fixed within 18 in. of the eaves (24). Storage cisterns, if fixed in an exposed position, must be *properly protected* against frost (41). Outside the Metropolitan Water Board area the depth of underground pipes is the same as stated above (xv), while every pipe other than a warning pipe, in an exposed position inside or outside a building must be *properly protected* from frost (xvi). As for storage cisterns, these, if placed in an exposed position, must be *reasonably* protected from frost.

The expressions "properly protected" and "reasonably protected" do not help one much. If every supply pipe were "properly" protected (by which one understands, given protection as by wrapping, casing, etc., so that no frost would affect it), then there would be no bursts. But few pipes or cisterns are protected to such an extent, and the recent frost was so severe that protection that would suffice in normal winters was not in many instances sufficient. The plain fact is, as many readers will admit, that in many houses, rising mains, water-supply pipes, inside pipes from mains, and cisterns, were left entirely unprotected in very vulnerable positions under roofs, while the position of the rising main, often just beneath the eaves, was the most vulnerable point of all. It may be that, with regard to houses erected within the last few years, the haste with which they have been erected, the desire to limit the cost, as well as immunity from very severe frosts, has led those concerned to disregard precautions that, during the past few weeks, might have prevented a great deal of damage and expense. Whether, as a result of recent experiences, those responsible for seeing that by-law requirements are obeyed will tighten up their surveillance and come to some general decision as to the meaning of "proper" and "reasonable" protection, one cannot say. It may even be that the by-laws themselves should be amended, and with that possibility in mind we take this opportunity of suggesting what, in our opinion, would be a protection for all time against the onslaught of "Jack Frost."

Bearing in mind the generally accepted belief that the heaviest frosts in this country will not penetrate the ground to a greater depth than 3 ft., or 4 ft. at the most, the 2 ft. 6 in. requirement might be extended. Furthermore, the relevant by-law should make it obligatory that every water-supply pipe should enter a building at that depth, and wherever exposed should be wrapped and/or encased from the place where it enters the building, and upwards. Immediately on rising to above the floor of the building there should be fixed a stopcock. The provision of a proper covering and encasing of storage cisterns should be insisted upon.

We do not attach much importance to a suggestion made in the Press recently that water-supply pipes should enter a house and be laid as near as possible to the flue most frequently used. As in so many houses the kitchen fire is used daily, a supply of cold water in summer time could not be obtained until the pipe was emptied of its tepid contents. A serious wastage of water would thus occur, and one of the purposes of the by-laws is to prevent wastage of water. Very definitely would one suggest that water-supply pipes do not find an ideal position inside a wall exposed to north or north-easterly winds.

The blame for what has occurred might well be placed upon builders, architects, and householders, all of whom may not have fully recognised their own particular responsibilities, nor kept in mind the vagaries of British weather. In some instances the first two classes might be held legally liable for damage caused by burst pipes or cisterns.

COMPARATIVE PRICES OF MATERIALS

BELOW we give a comparison of the prices of some of the principal building materials at January 1, 1938 and 1939:—

	January 1, 1938. £	s.	d.	January 1, 1939. £	s.	d.
Bricks—						
Stocks	4	8	0	4	8	0
Flettons	2	6	3	2	6	3
Glazed	24	0	0	24	0	0
Thames Ballast	0	7	3	0	7	3
Pit Sand	0	7	9	0	7	9
¾ in. Shingle	0	7	3	0	7	3
¾ in. Broken Brick	0	11	3	0	11	3
Portland Cement	2	2	0	2	2	0
Ground Blue Lias Lime	1	17	6	1	17	6
Bath Stone	0	2	10¾	0	2	10¾
Portland Stone	0	4	5	0	4	5
Building Timber—						
4 in. × 11 in.	28	10	0	26	10	0
3 in. × 11 in.	27	10	0	26	10	0
3 in. × 9 in.	24	10	0	23	10	0
3 in. × 7 in.	23	10	0	22	10	0
3 in. × 4 in.	23	10	0	22	0	0
Slates (per 1,000)—						
24 in. × 12 in.	31	5	0	31	5	0
20 in. × 10 in.	20	15	0	20	15	0
16 in. × 10 in.	14	7	6	14	7	6
Tiles—						
Machine made	4	2	6	4	2	6
Hand made	4	17	6	4	17	6
R.S. Joists	17	10	0	16	10	0
Iron—						
Common Bars	12	5	0	13	15	0
Mild Steel Bars	16	5	0	14	10	0
Sheet Lead	24	10	0	23	0	0
Raw Linseed Oil	0	3	2	0	2	11
Turpentine	0	3	2	0	3	4
Ground English White Lead	51	0	0	50	0	0
White Lead Paint	70	0	0	69	0	0
Red Lead	50	0	0	38	0	0
Glass—						
18 oz. sheet			2⅝			2⅝
24 oz. ,,			3⅞			3⅞
26 oz. ,,			4½			4½

City and Guilds: Department of Technology.

The annual report on the work of the Department of Technology, City and Guilds of London Institute, 31, Brechin-place, S.W.7, has just been published (London: John Murray, Albemarle-street, W.1, price 1s. net). The success which attended the work of the Department in the 1937-38 session is reflected in the tables showing the numbers of examinees in the various subjects. Almost every subject showed an increase.

INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

We do not undertake to reply to inquiries concerning proprietary materials.—ED.

QUESTIONS.

The Meaning of "Net P.C. Sum."

SIR,—Some months ago I was asked to prepare plans and specifications for a house to be erected some distance from my office, and the client decided that he would not ask me to supervise the work but would arrange the contract and other details himself with the contractor if I would supply him with the necessary copies of the plan and specification, and this was done. In the specification the words "Provide the net P.C. sum of" occur several times, and the building owner has written to me asking what this means, to which I have replied that it is generally understood that the words "net P.C. sum" mean the amount to be paid by the builder to the merchant after the trade discount has been deducted, but not including any cash discount. I feel sure that this is the generally accepted view, but in view of the fact that the contractor has told the building owner that the trade discount belongs to the contractor, I should be glad to have your view.

R. C.

[The following answer has been contributed by a legal correspondent: The custom of allowing trade discounts to builders is so universal that they not only seek to recover the cost which an ordinary person has to pay, and out of which they have had the benefit of trade discounts, but discounts for cash in addition. As to cash discounts, it is the custom to allow them to the builder and for the builder to recover them, but there seems no doubt that in law, when a p.c. item is described as "Provide the net p.c. sum of," the builder is not entitled to trade discounts at all.]

Payment of Sub-contractors.

SIR,—The correspondence relating to this matter does not make it clear when a general contractor ought to pay his sub-contractors. My view is that payment should be made, subject to any specific agreement, when the work is done or the goods delivered, less a proportionate amount related to the general retention fund of the contract. The practice seems to be that the general contractor considers himself absolved from payment until he himself has received payment under the general contract. By this arrangement the general contractor simply receives payment and makes it by return of post, and so does no service to warrant his earning of a cash discount.

I feel that the whole meaning of a cash discount has become obscured and remote from its original intent—viz., the payment of a rent for the use of hard cash. The recent revision of the R.I.B.A. contract, allotting a cash discount of 5 per cent. for one class of goods and of 2½ per cent. for another class of work, seems to encourage this tendency, which, in my view, is entirely improper. Some statement upon this point would be appreciated.

ARCHITECT.

Insurance of Buildings.

SIR,—It is usual to have the insurance policy of an existing building endorsed to cover fire risks during building works in progress when alterations and additions are being made. I should be glad to know whether, in fact, a policy would lapse if this precaution were overlooked, so that if fire arose during the course of the works, whether or not as a direct result of them, the insured would cease to have a proper claim.

PROPOSER

ANSWERS.

Stains on Plaster Ceiling: Patterning of Plaster.

[ANSWER TO "HOUSE BUILDER," DECEMBER 23.]

SIR,—When plaster discolours owing to impurities in the base material or in the plaster itself, the plaster is marked all over, and not with a network of stains. It is most likely that a series of hair-line cracks have developed, which are too small to be seen by the naked eye, and have become filled with dirt from the atmosphere. Surface cracks of this sort are likely to form, and if the plaster sweats or if there is any condensation, dirt will be deposited in the cracks at a rapid rate. To avoid such marks showing through the distemper, first give the plaster a good brush down with a dry, stiff, bristle brush, and then distemper.

W. E. W.

Damp Walls in Bedroom.

[ANSWER TO "BUILDER," DECEMBER 23.]

SIR,—In the absence of particulars about the quality of the bricks used and the class of brick jointing, one can only reasonably assume that the trouble referred to comes from one or both sources. Some bricks are highly absorbent, and it might be well to treat the brickwork, including joints, with a waterproofing liquid outside. On the other hand, the dampness in the bedroom may be due to the coating not being properly ventilated at the foot and extreme top.

G. W. H.

Strength of Timbers.

[ANSWER TO "CONSTRUCTION," JANUARY 6.]

SIR,—I should advise "Construction" to get the best information on the subject from the Forest Products Research Laboratory, Princes Risborough, Bucks, from which valuable data on the subject can be obtained.

G. W. H.

Lead.

[ANSWER TO "ARCHITECT," JANUARY 6.]

SIR,—It is, without doubt, a good principle to use lead to protect the heads of windows; it need not be too heavy, 4- or 5-lb. lead being ample. It should be put into the joints of brickwork or stone and wedged with lead wedges and pointed. I have been engaged recently in the North in the demolition of some old buildings some 60 or 70 years of age, and, considering the adverse weather conditions prevailing in the locality, the lead removed from these buildings was still in fairly good condition, signs of deterioration being almost negligible.

G. W. H.

HOUSE PROPERTY MANAGEMENT

The importance of house property management in the modern community was emphasised by the Minister of Health, Mr. Walter Elliot, at the dinner of the Society of Women's Housing Estate Managers in London recently. The Minister said:—

With the enormous developments going forward, great and growing importance attached to the function of house property manager in the sphere both of business and social welfare. It was the ideal of the great pioneer, Octavia Hill, whose centenary they were celebrating, that the manager should be not only an active agent for the maintenance of sound property, but a force for good in the lives of the tenants.

The total number of women members of the Society now employed on house property management was 168, covering 54,400 tenancies. Four out of every five of these tenancies were municipal, and local authorities had doubled the number of women managers employed by them since 1934.

This subject was much in their minds just now, in view of the recent report upon it made by Lord Balfour's Sub-Committee of the Central Advisory Housing Committee. Mr. Elliot agreed in principle with the Sub-Committee that, while it was unnecessary for the whole of the functions which bring the local authority and the tenants into association to be concentrated in the hands of one person, yet the greatest concentration consistent with practical efficiency would be likely to prove most successful. He added that, while he would not be so unwary as to say that either men or women as such should be excluded from house property management, he would say that there were no functions involved in good house property management which could not be adequately performed by women of the right training and character.

TIMBER SHIPPING

END OF SEASON REFLECTIONS.

By "Timber Merchant."

WITH the end of the timber-shipping season rapidly approaching, now would seem to be a suitable opportunity for considering the trend of last year's trading and endeavouring to form some idea of how the situation as it is at present is likely to affect coming conditions.

Last year turned out to be a thoroughly bad one from the average timber merchant's point of view. Builders, in general, will already have realised this from the progressively lower prices they have been quoted right through the season until quite recently. Now, however, a distinct check is noticeable in this downward tendency, and in some cases there has been even a slight stiffening of prices. As will be seen, this is a perfectly logical development of the somewhat peculiar situation.

The year 1938 started with an abnormally large quantity of unsold timber still remaining in the docks and on the wharves from the previous season's shipments. Business was, on the whole, quiet, and with the large stock already in the country, there was no great eagerness on the part of buyers to fix up new goods in any quantity for future shipment. In these circumstances, the shippers decided upon a policy of price-reduction in order to encourage more rapid sales, and this attitude has governed their activities almost up to the present time. Business on this side, however, showed no sign of improvement, and, in consequence, buyers were constrained to restrict their purchases to the barest minimum in view of the shippers' price-cutting policy.

Normally, timber stocks in London reach their lowest level during May or June of each year, after which they rise rapidly until January, at which time they attain their peak point. Last year, however, the lowest point was not reached until September, and stocks in London are still very low indeed. The reason for this is that nervousness on the part of buyers resulted in a reduction of one million standards of timber imported during the first nine months of last year as compared with the same period in 1937. As a natural consequence, there is still a large quantity of timber waiting to be shipped from abroad, and up till quite recently buyers were finding little difficulty in arranging for bills of lading to include practically every size needed to be shipped before the end of the present season.

Thus, merchants have been afforded an unusually late but very welcome opportunity of making up their stocks with little fear of any appreciable fall in values between seasons. Moreover, after the disastrous experience of 1937, much care will have been taken to avoid overstocking, so that the new season is likely to open with a shortage rather than a glut of timber available on this side.

Generally speaking, it is now no longer possible to arrange specifications exactly to customers' requirements, but bills of lading of assorted sizes are still arriving in fair numbers, most of which the importers expect to place without much difficulty. Some of the leading shippers, however, have decided to retain their unsold balances until the new season opens, hoping thereby to obtain better prices than are possible at present. Provided they are efficiently stored during the winter months, these so-called "overlying" stocks should represent better value than the new goods as, although perhaps a trifle dingy in appearance, they will be appreciably drier than freshly manufactured timber. On the other hand, careless piling can thoroughly ruin such overwintered stocks, so that their purchase represents something in the nature of a gamble.

Taking all things into consideration, it seems fairly certain that buying will be much more active at the opening of next season as compared with last, and, granted even a slight improvement in general trade conditions, a firm start and steady prices should result.

NOTES ON COSTING AND VALUATIONS OF BUILDING CONTRACTS

By F.I.O.B.

INTRODUCTION.

A CONSIDERABLE literature has been devoted to the technique of the building and contracting business, so that further treatment might appear superfluous, but it seems to the writer that there is a gap.

Text-books have been published on estimating, on the legal complexities and pitfalls of contracting, on the book-keeping of a builder's business, and, of course, on the structural problems involved; but there does not appear to be any work on the valuations and costing of individual contracts, and yet the subject is an extremely important one. Profits must be earned on the contract if they are to be made at all, and no amount of organisation in the general office will avail if losses are being made on the work.

The ideas suggested in the following pages are probably open to criticism, but they have at least the merit of having been worked out and applied in practice, and have shown a reasonable amount of success.

The problems involved can be divided into three parts :—

(1) Periodical variations.
(2) The booking of variations.
(3) The checking of the final account.

It should be stated in the first place that these notes deal with the most common type of contract, that in which quantities form part of the contract.

CHAPTER 1.

Valuations and Checking of Costs at Regular Intervals.

The most convenient period to check costs is usually at the same time as the monthly certificate, though in the case of a very large works it may be necessary to do so once a fortnight, or even once a week.

It is, of course, useful to make checks on particular sections of the work, such as a span of concrete floor, portions of brickwork, hanging doors, etc., at odd times, not only to ascertain if the work is being done below cost, but also as a check on the estimating, but these checks will not give a true record of the work as a whole. To arrive at this it is necessary to have a complete record of the work done up to a certain date and a record of equivalent costs.

The method which the writer has found most useful is as follows :—

In the first case the work done. When this is agreed for purpose of certification with the surveyor, as is usually the case in public work, the resultant figures, after the surveyor and the contractor's representative have fought the matter out, are likely to be fairly correct and will probably not err on the side of optimism.

In the case of private contracts in which the contractor prepares his own figures for submission to the architect who sends them to the surveyor for his opinions, the matter is not quite so simple. Commonly such statements are not very detailed. Perhaps a quarter or half the brickwork may be inserted, as the case may be, and other items on the same lines, without any very exact measurement. They are also liable to be coloured with a good deal of optimism on the principle that "a bird in the hand is worth two in the bush" and by the knowledge that neither the architect nor the surveyor will check the statement very closely, but will knock off a lump sum to be on the safe side. Such statements are therefore rarely valuable for costing. It is very much better to make it up as accurately as possible, at any rate for this purpose, and if the contractor knows from his experience of the people with whom he is dealing that neither the architect nor surveyor will check it properly, but merely knock off a lump sum, so that he will receive less than he is entitled to, it is quite easy to add to some of the items in the copy which he sends to the architect.

It may be mentioned, incidentally, that a vicious habit has arisen of recent years of architects never checking statements for themselves, but sending them on to the surveyor. It is a vicious habit because the quantity surveyor is usually not paid for this work, and hence, naturally, is apt to do it in somewhat a cursory manner. It is generally at the penultimate certificate that everyone begins checking closely.

To resume. Having got as accurately as possible the value of work done, and if there is any error it should be in the direction of too little rather than too much), we now turn to the cost side. This must, of course, be arrived at for the same date as the work done.

1. Turning first to the ledger showing wages and materials bought and paid for, this gives us our first figure, for in the great majority of cases there will be a good deal to add. In the first place, wages; since if the certificate statement has been made up in the middle of the week, the wages will appear only in the ledger up to the week-end preceding. They may not be in as far as this. It will depend on how busy the cost clerk has been.

2. If they are not, then the figures of wages unbooked must be ascertained and added.

3. We now come to materials. Those paid during the previous month will have been booked, but not those due to be paid in the next month. The quantity of these delivered on the site must be ascertained from invoices, or, if invoices are not yet received, from delivery notes.

4. The value of goods delivered from the contractor's yard, exclusive of joinery, which is best dealt with separately, must then be added.

5. We now come to the contractor's own sub-contractors, such as asphalter, plasterers and plumbers. This is simple. The amount to be included should be the same as the corresponding amount included in work done, less any amount paid on account and included under Figure 1.

6. Sixthly, we have specified sub-contractors. These we deal with on the same lines as the contractors' sub-contractors.

7. Seventhly, we have joinery. If no joinery has yet been included under this heading of work done, but joiners' wages have been included under 1, such wages should now be deducted. If some joinery has been included, then it will be necessary to ascertain the proportionate cost of labour and material, and add or deduct as the case may be. Suppose, for instance, £300 worth of frames have been included under work done, and the amount of joiners' labour and material already booked in the ledger includes, say, £1,000 worth of doors and frames, then the difference between the cost of the doors and the cost of the frames must be deducted from the cost item; but if £1,300 worth of doors and framing has been included in work done, when the ledger cost under Figure 1 includes only a part of such joinery, then the cost of the remainder must be ascertained and added.

There is now a final adjustment to be made. It will be seen that all material delivered on the site has been included, but it is probable that a proportion, especially of cement, bricks, sand and ballast, will not have been used. This quantity should be ascertained on the site and the cost deducted from the total cost figures. We now add any fees not already included under Figure 1, and, finally, add a percentage for overhead charges, and we have a total cost which should correspond with the amount of work done on the same date.

Now take the difference between the two figures and we get the profit or loss on the contract at that date. Deduct the amount belonging to nominated sub-contractors for both statements, on which the contractor knows how much profit he has put, if any, and take the difference between the two resultant totals, and the contractor can arrive at the percentage of profit or loss on his own work. Again deduct the contractor's sub-contractors' amounts, on which again profit is known, and again take the difference between the resultant figures, and the contractor can ascertain the profit or loss on the work he had done himself by direct labours.

In many cases the resulting figures will be very revealing. It must, of course, be admitted that absolute accuracy is not possible, but accuracy within 1 per cent. is quite possible on straightforward contracts. With regard to complicated alterations contracts, however, the matter is different. As far as new buildings are concerned, if a profit is shown by the above method half-way through the contract it may reasonably be presumed that, barring unforeseen accidents, it will be maintained, as the quality of estimating is likely to be the same for the later trades as for the early.

With alteration work, especially when involving large numbers of difficult spot items, the same cannot be said. The same estimator may make a reasonable calculation of some spot items and be mistaken in others, especially where, as is so often the case, the pricing of the more complicated approximates to guess-work. Moreover, the conditions of

JOB No. 7 HIGH STREET. **VARIATIONS.** Sheet No.

Item No.	Variation Order No.	DESCRIPTION	Date. 1938.	AUTHORITY.	How returned m.a.c.	REMARKS.	Addition or Omission.
1		Extra foundations by requirement of District Surveyor.	Apr. 5	See our letter to Architect of this date.	M	1.	+
2		Drains to be cast iron instead of stoneware.	" 12	See Architect's letter of this date.	M	2.	+
3		Various alterations to Employers adjacent buildings	May 3	Ditto.do.		3.	+
	1	Cut door openings as shown on detail.			D/W	1. see day-work voucher Nos. 1 and 2.	
	2	Divide large office with partition as ditto.			M	2.	
	3	Enlarge window openings on 1st floor over-looking street and supply and fix new steel window etc.				3. See day-work vouchers Nos 3&4,5 and 6.	

FIG. 1. SPECIMEN VARIATION SHEET.

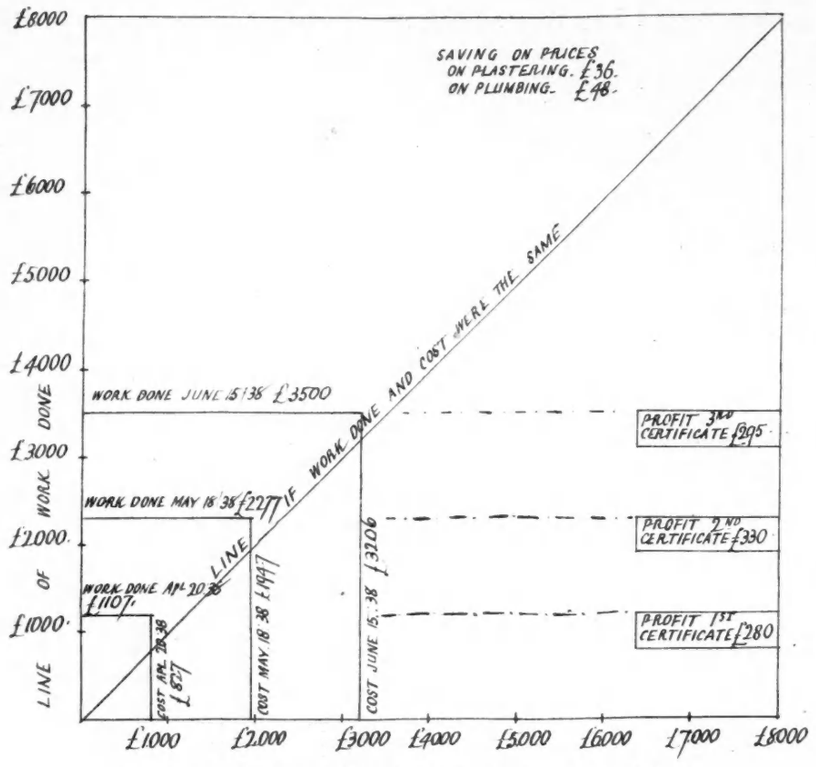


FIG. 2. SPECIMEN GRAPH OF VALUATION EACH MONTH.
(In practice, of course, this is prepared on squared paper).

the work may differ materially in the latter from the earlier stages, especially when the employers are in occupation. In a large store, work done to the staff or warehouse portions where the employees can be given directions is infinitely easier than that done in the public portion, even though the actual item of work —*e.g.*, cutting a doorway—is the same.

Nevertheless, it is still useful to adopt the same system. If a profit is shown it is wise to write it down by, say, 15 per cent., to allow for possible inequalities over the whole contract.

In contracts which run for longer than a year, or in the case of smaller contracts which, though they run less than 12 months, are part in one financial year and part in another, these valuations are very useful for the calculations of profit and loss by accountants, who have not the necessary technical knowledge to discern whether contracts in progress show a profit or not.

As a means of showing the progress of a contract at a glance, it is useful to prepare a graph on squared paper, the left hand side showing work done, the bottom line the cost; a diagonal line from the left-hand bottom corner to the right-hand top corner will be the line if work done and cost were the same. Each square will represent £100, £500 or £1,000, according to the size of the contract. At each valuation the amount of work done is noted on the left-hand side and a line drawn across. The cost is similarly noted on the bottom line and a line drawn upwards, so that the two lines intersect. If the intersection takes place above the diagonal line a profit is shown; if below, a loss. Amount of profit or loss is shown by the number of squares above or below (see diagram on this page). The top line can be used as a line of time by dividing it into months. At the top left-hand corner of the graph the amount of the contract should be stated with a note of the amount of provisions and estimated profit. On the right-hand corners make notes with regard to the profit or loss made in the office and off the site, such, for example, as savings in buying materials, or in letting subcontracts, or loss by having to pay more. This will enable the contractor to see how much of the profit or loss is due to the foreman's organisation and capacity in handling men. Disappointment has often been caused by the failure of a foreman on one job whose previous contract had shown a large profit. Close investigation would often have shown that the success of a first contract was due to causes outside the foreman's control.

It is useful, also, to note in each valuation, which trade occupied the bulk of it. If one period, for instance, which showed a low ratio of profit mostly consisted of brickwork, while another which showed a high ratio was mostly joinery, it is a fair inference that the brickwork was priced too low and the joinery too high. It is true that it is unwise for a reasonably successful estimator (and by reasonably successful is meant one whose contracts usually show a profit, not necessarily one who obtains a large amount of contracts) to alter the basis of his prices too much, if on the average they have been shown to be correct, since the mistakes average out. If he does so he may very easily become too high or too low.

This applies to the average contract which contains a proportion of all trades. But the information as to where he is too high and too low may be very useful in special cases. If an estimator, for instance, whose valuations have constantly shown his brickwork to be too low and joinery too high, is pricing a warehouse which is merely a brick box with wooden or concrete floors and practically no joinery, he should obviously add to his price. If, on the other hand, he is pricing a bank fitting job—all joinery —he might equally take a percentage off. Otherwise, in the case of the warehouse, he might lose money, and in the case of the bank fitting he might lose the contract.

It is always well to be slightly pessimistic as concerns work done, especially in the case of variations, which should be written down.

SPECIMEN MONTHLY VALUATION SHEET.

June 15, 1938.

WORK DONE.

CONTRACT at No. 7, High-street.

				£	s.	d.
Preliminaries—						
Hoardings				30	0	0
Excavator and Concretor—						
All as bill of quantities, pp. 12–18 ..	£720	0	0			
Deduct provisional amount for hollow tile floors	300	0	0			
				420	0	0
Bricklayer—						
As bill	£1,125	0	0			
Deduct—						
Provisional brickwork, 1½ rod at £26 9s. 6d.	39	14	3			
Provisional amount for stock brick end. E.O. Flettons, 1 rod at £8 15s. 6d. ..	£8	15	6			
	£48	9	9			
				1,076	10	3
Asphalt—						
As bill				108	0	0
Drainage—						
As bill	£247	0	0			
Deduct provisional for connection to sewer	£20	0	0			
				227	0	0
Mason—						
As bill	£851	0	0			
Deduct provisional for granite dressing	£825	0	0			
				26	0	0
Roof tiles—						
As bill				75	0	0
Carpenter—						
Centres, turning pieces floors and roofs, as bill pp. 28–29				202	0	0
Joiner—						
Deal flooring as bill, p. 31, its. 1 and 2				43	16	7
130 ft. sup. D.H. deal frame at 4s. 6d.				29	5	0
Deal door frames—						
34 ft. 2½ in. by 4 in. rebated frame			1/2	1	19	8
C/f. ..				£2,239	11	6
B/f. ..				£2,239	11	6
101 ft. 6½ in. by 3½ in. oak sunk weathered and throated projecting framed sill .. 5s.				25	5	0
				£2,264	16	6
Add—						
Provisional accounts. The Hollow Tile Floor Co..	£229	0	0			
Connection to sewer paid out to borough Council	£15	0	0			
The Art Granite Co.	£780	0	0			
				1,024	0	0
Quantity surveyors' fees and lithography				214	0	0
TOTAL OF WORK DONE				£3,502	16	6

Say—£3,501 0s. 0d.

N.B.—For use as an application for certificate retention would, of course, have to be deducted, but not for purpose of valuations.

SPECIMEN MONTHLY VALUATION SHEET.

COST.

June 15, 1938. Contract at No. 7, High-street.

				£	s.	d.
No. 1	To cost as booked in ledger up to and including June 4, 1938			2,983	4	0½
„ 2	Add wages up to and including June 15, 1938			62	10	7½
„ 3	Add cost of materials delivered on site up to and including June 15, 1938, but not yet booked in ledger as invoice or delivery ticket .. .. (N.B.—A separate list should be made of these.)			25	4	2½
„ 4	Sundries delivered from yard as delivery notes .. .. (A list should also be made of these.)			2	6	2
„ 5	Asphalt work as the bill—					
	Asphalt Co. a/c (not yet checked) ..	£98	3 7			
	Deduct paid on a/c and included under Fig. 1 ..	£60	0 0			
				38	3	7
	Add Westgrove Tiling Co. a/c			67	2	8
„ 6	Hollow Tile Floor Co.	£229	0 0			
	Deduct paid on a/c and included under Fig. 1 ..	£207	0 0			
				22	0	0
	Art Granite Co.	£780	0 0			
	Deduct paid on a/c as last ..	£710	0 0			
				70	0	0

No. 7 Included under work done was £31 9s. 8d. worth of joinery

			£3,270 11 3½
Wages expended on joiner's shop and value of material amount to	£220 6 2½		
Deduct work included ..	£31 9 8		
Balance to be deducted from cost	£188 16 6½	188 16 6½	
	C/f.	£3,081 10 9	
	B/f.	£3,081 10 9	
Deduct further materials on site, say: 4¼M. Fletton bricks at 50s.	£11 5 0		
2¼M. Stocks ditto. at 90s. ..	£10 2 6		
2 tons of Portland cement at 42s.	£4 4 0		
5 yds. sand at 7s.	£1 15 0	27 6 6	
(N.B.—Above required for boundary wall and outbuilding which occur in a special section of the bills of quantities.)			
		£3,054 4 3	
Add overhead charges 5 per cent.		152 13 3	
		£3,206 7 6	

Say £3,206 0s. 0d.

SUMMARY OF PROFIT AND LOSS.

Work done ..	.. £3,501 0 0	
Cost	.. £3,206 0 0	
Profit	.. £295 0 0	

Fraction over 8½ per cent.

Profit on builders' work after deducting P.C.'s and fees—

Work done	£3,501	Cost ..	£3,206
Ded. P.C. and fees as included ..	1,238	Ded. P.C. and fees included..	£1,238
	£2,263		£1,968
Less cost ..	£1,968		
	£295		

A fraction over 15 per cent.

Profit after deducting P.C. fees and sub-contractors—

Work done less P.C.s and fees	£2,263
Asphalt and tiles	183
	£2,080
Deduct	£1,803
	£277
Cost after Ded. of P.C. and fees	£1,968
Ded. asphalt and tiles	£165
	£1,803

= say 15 per cent.

(To be continued.)

LIGHTING IN FACTORIES

The Fourth Report of the Departmental Committee on Lighting in Factories has just been published. The Committee was appointed to review the recommendations made in the reports presented in 1915, 1921 and 1922 by the Departmental Committee on Lighting in Factories and Workshops as to the conditions necessary to secure adequate and suitable illumination in such works or in any class of description thereof or for any particular process, and to advise as to standards of sufficient and suitable lighting proper to be prescribed under Section 5 (2) of the Factories Act, 1937.

The Report states that the Committee consider that a basis for statutory minima for the various processes of industry is practicable and should be determined, and therefore recommend that the work of the Committee be further continued to this end.

Copies of the Report may be obtained from His Majesty's Stationery Office, Kingsway, W.C.2, price 1s. net.

IMPROVEMENTS IN CONCRETE CONSTRUCTION

DURING the past few years there has been a very great increase in the use of reinforced concrete for the construction of buildings in urban areas. This has not been due entirely to improvements in design, although the higher stresses allowed by the new London County Council By-laws and the Code of Practice for reinforced concrete have enabled economies to be made in the sizes of members. The most important factors are the greater speed of construction and the improvement in the quality of concrete due to organisation on the site by the contractor. Instead of reinforced concrete being a slower constructional material and wasteful of space, as was the case a few years ago, we now find such buildings as Berkeley Square House, Dolphin Court, and the new Earl's Court Exhibition buildings—the largest office building, block of flats and exhibition building respectively in Europe—built of reinforced concrete because this was not only an economical but also a speedy method of construction. At the same time much attention has been given to the surface appearance of concrete, with a view to obtaining an attractive surface direct from the shuttering or with a minimum of expense after the shuttering has been stripped.

Smooth Concrete Surfaces.

One of the difficulties of the past was to attain a smooth concrete surface without rubbing down and filling holes, which always gave a patchy result. This could be hidden by a cement wash to give a grey monotone, but the result was hardly suitable for important buildings in urban areas. This treatment is therefore usually confined to industrial structures, and city buildings of reinforced concrete were invariably faced with another material. Tongued-and-grooved planed boards, if carefully erected, give a smooth surface, but the grain of the wood is impressed on the concrete. This has been overcome by the use of plywood or special materials supplied for the purpose in flat sheets. These sheets are fixed to the inner face of the shuttering, and the concrete cast against them has a perfectly smooth surface. There is very little difference in the cost of tongued-and-grooved shuttering and of shuttering with these linings. When a lining is used there is no need to use planed boards, because they will act only as a support for the lining and will not come into contact with the concrete. Also, less timber can be used, because the boards can be spaced apart up to 2 in. or so without the lining buckling or bulging. These linings may be used many times before they are unfit for further use, so their cost may be spread over a number of contracts. They entirely eliminate the cost of rubbing down or cutting off the fins from concrete surfaces which is usually necessary when unlined shuttering is used.

Cement Paints and Colour Washes.

The possibility of obtaining smooth concrete surfaces has given an impetus to the decorative treatment of concrete with cement paints and colour washes. The cement wash that rapidly became discoloured due to the action of the free lime in the cement, and which frequently flaked off with changes of temperature, was a familiar sight a few years ago, but great advances have been made since then. Cement colour washes now supplied by reputable firms are the result of much research work in this country and abroad, and can be guaranteed to keep their colour apart from the effects of soot and other atmospheric impurities. They may also be obtained with an admixture which prevents the wash from flaking off; it is indeed often impossible to chip the film of colour away without bringing with it some of the concrete on which it is brushed. A further development is the incorporation of rapid-hardening solutions with the cement wash, which cause it to harden within an hour or two of its application, thus avoiding the danger of drying out too rapidly in hot weather, and making it unnecessary to keep the treated work damp for two or three days.

Early attempts to paint concrete surfaces were also failures due to the free lime in the cement coming through the paint as efflorescence or to the expansion and contraction of the concrete cracking the paint; in some cases these chemical and physical actions caused the paint to peel off. Modern cement paints are specially prepared for the purpose and are not affected by these actions. They contain a solution which prevents free lime coming through the surface of the concrete and thus obviates efflorescence or discoloration due to chemical action, and they are also made with a china wood, tung oil, or other elastic base which is waterproof and also sufficiently elastic not to be affected by the movement of the concrete due to temperature changes. These paints are supplied in a variety of colours and shades, and also to match the colour and texture of certain building stones, and are washable.

These new types of cement paints and colour washes have successfully withstood very severe tests, and even in exposed seaside towns they are giving satisfactory results. The smooth surface resulting from the use of shutter linings, combined with a coloured cement paint or wash, is one of the cheapest methods of giving concrete an attractive surface. It will not, of course, find favour with those architects who hold the view that, in the interests of truth, concrete should "express itself," but it will not be despised by those who know that deal is a suitable material for a cupboard but agree that its appearance is improved if it is smoothed and given a coat of paint.

Curing.

A great deal of attention has for many years been given to improving the quality of concrete. Selection of aggregates, grading, water content, proportioning, mixing and placing have all been studied, and usually there has been no difficulty in applying the knowledge gained. Suitable aggregates, properly graded, can be obtained from any up-to-date supplier. Water content can be controlled by the machine which mixes the materials perfectly; proportions can be accurately controlled by gauge boxes or batching plants; close supervision will ensure proper placing, and here vibration has recently come to the aid of the contractor. The requirements for proper curing, and the importance of this process, have also been realised, but here it is only recently that the process has been facilitated. Methods of curing, such as covering floors with sand or damp earth, hanging tarpaulins against walls, spraying with water, or covering with any odd materials available may be satisfactory if they are properly carried out. But some of these methods involve a great deal of labour and are consequently costly, while the material may not be available for others.

This has recently been overcome by the use of what are known as "concreting papers." These are very strong and waterproof building papers supplied in rolls of convenient width and length, and all that is necessary is to unroll the paper over a freshly laid floor and roll it up when the floor is hard. The paper can also be hung against walls and other parts of the building. It can be used many times before it becomes unfit for further use. Frost, drying winds, and the rays of the sun are kept from the concrete, which is thus prevented from drying out too quickly, and the paper also prevents the concrete from being pitted by rain. The use of concreting paper is becoming standard practice with many building contractors and engineers responsible for road work, and is one of the cheapest and most certain ways of enabling concrete to harden under the best conditions. The paper is also useful for laying on the soil to receive concrete in foundation and road work, as it gives a clean surface, prevents the mixing water from draining into the soil, and prevents any impurities in the soil from damaging the concrete.

THE SPECIAL AREAS OF SCOTLAND

ALTERNATIVE METHODS OF HOUSE CONSTRUCTION*

THE housing problem in Scotland has caused and is still causing great concern to the Department of Health for Scotland. Upwards of a quarter of a million houses are still required to wipe out slums and put an end to overcrowding and, at the present rate of progress, it will take 15 years or more to achieve this. The problem is particularly acute in the industrial belt between Forth and Clyde, large areas of which have been scheduled as Special Areas.

In these areas local authorities have not only to face the handicap which impedes housing progress over all the country, namely, the shortage of certain classes of building labour, but are also seriously hampered in their efforts to solve their housing problems by the depression of the heavy industries on which the localities normally depended for their prosperity. In these circumstances the previous Secretary of State for Scotland felt that something must be done to assist those local authorities to speed up the output of houses. On his initiative and with the active co-operation of the Commissioner for the Special Areas, the Scottish Special Areas Housing Association, Ltd., was incorporated under the Companies Acts. This Association was constituted a year ago to assist the local authorities in the Special Areas to meet their housing requirements in connection with the replacement of unfit houses and the abatement of overcrowding. It is a housing association within the meaning of Section 25 of the Housing (Scotland) Act, 1935, *i.e.*, it does not trade for profit.

Since one of the serious handicaps to progress, affecting not only the Special Areas but practically the whole of Scotland, is the shortage of bricklayers and masons, it was essential that the Association should not enter into competition with the local authorities in their own field in the conventional brick and stone or the result might have been simply to slow down still further the local authorities' progress. It was accordingly decided that the supplementary building to be undertaken by the Association should be confined to alternative methods of construction and the forms of construction selected were poured concrete—cellular and dense—and timber.

At the outset the Association was faced with a certain amount of suspicion on the part of local authorities, who felt probably that their position as Housing Authorities was in danger of being undermined and also doubted the soundness of the novel methods of construction proposed. This prejudice has now been largely overcome and a large majority of the 38 local authorities in the Special Areas are anxious to co-operate with the Association.

Since their incorporation, the Association have necessarily spent a good deal of time in the preliminary work of setting up their organisation, negotiating with local authorities, acquiring sites and preparing plans. They are now, however, well into their stride and have already arranged to build fully 5,000 houses spread over six counties and nine burghs in the Special Areas. Of these about 3,000 will be in poured concrete and the remainder in timber.

The forms of construction being erected are as follows: (1) Poured solid walls of cellular concrete. (2) Poured cavity walls of dense concrete. (3) Walls of framed timber. (4) Walls of solid timber.

Poured Solid Walls of Cellular Concrete.

The walls will be 8 in. thick and consist of 1 part of cement to 8 parts of either whin chips, clinker or foamed slag. The outer walls will be finished with a skimming coat of cement and on the inside with lime plaster.

This method of construction has been used in various parts of the country in the last 10-12 years and also in Holland and has proved, on the whole, satisfactory.

Poured Cavity Walls of Dense Concrete.

The outer walls are of two skins 3 in. thick with a 3 in. cavity, and consist of 1 part cement, 2 parts graded sand, and 4 parts whin chips. The outer walls are covered on the outside with cement plaster or roughcast and on the inside with lime plaster. Where the walls are of dense concrete it is necessary to have a certain amount of metal reinforcement, not for structural strength but to guard against expansion and shrinkage cracking.

Apart from the outer walls and partitions, the construction of the house is similar to that of an ordinary brick house. The use of steel shuttering in both forms of construction is necessary and is a serious factor as regards cost. It cannot be too strongly urged that only reputable firms with a knowledge of concrete construction should be employed for the erection of concrete houses.

Walls of Framed Timber.

This is the common type of timber construction. The outer walls are of studding covered on the outside with ½-in. diagonal boarding, building paper and weather boarding or shingles and on the inside with one of the fibre or plaster boards. The party wall between the houses will be of concrete.

Walls of Solid Timber.

The outer walls of this type are of 2 in. and 3 in. solid timber and are usually formed of panels of a uniform width with building paper and weather boarding and shingles on the outside face, and one of the fibre boards on the inside fixed to grounds placed on the solid framing. The party wall between the houses will be of concrete.

Both Swedish and Canadian Red Cedar timber are being used for both types. Red Cedar has some interesting and useful properties. It does not seem to be susceptible to dry rot and can stand up to weather conditions even if untreated externally. With Swedish timber external painting will be necessary every three or four years. Shingles on the roof are used sparingly, and most of the roofing is of slates or tiles. The Association is restricting framed construction to one-storey houses.

In addition, various local authorities throughout the country are now arranging to build over 2,500 timber houses themselves to supplement their ordinary programme of building in brick and stone.

Aggregates for Cellular Concrete Construction.

From past experience it appears that clinker is possibly the most satisfactory aggregate for this method of construction. Recently, however, foamed slag has appeared on the market and, from the fact that it is chemically inert, it may prove a still better aggregate for this purpose. From the small amount of work I have seen in Scotland where foamed slag has been used, it has proved satisfactory. I understand it is being increasingly used in the south for various types of buildings and has proved satisfactory. The present difficulty in its use in Scotland is the price charged for the material being brought from the south. It is hoped that a steel works in the west of Scotland will in a short time be able to produce foamed slag at a reasonable cost.

It is known that there have been many failures of breeze and similar coal residue aggregates due to impurities such as lime, sulphur, flue dust, etc. A complete investigation into the subject has been made by the Building Research Station and the results published in a pamphlet entitled "Breeze and Coal Residue Aggregates." This publication shows the many dangers as well as indicating how this material can be safely used.

The principal safeguard upon which one can rely is screening out the fine material, say, finer than ⅜ in. It has been found that injurious material is—if present—invariably found in powder form and is separated from the useful material for cellular concrete by the screening. This is clearly brought out in the Building Research Station publication. A further safeguard is where a resident chemist and fuel engineer is employed at a power station fully equipped with mechanical stokers and using only pulverised coal.

Past experience of clinker aggregates for cellular concrete, when prepared as above described, appears to indicate the perfect safety of the material for this purpose. Work done in various English towns has, I believe, after fully 10 years' experience, given no trouble. In Holland many houses of this construction built in Amsterdam and The Hague have been successful. I have seen the Amsterdam houses, and Dr. Keplar, who was responsible for their erection, informed me that he had had no trouble with the aggregate.

Clinker or foamed slag cellular concrete walls have certain advantages over cellular concrete of other harder materials and also dense concrete.

(*a*) This type of aggregate is itself cellular and is therefore a good insulator. A wall where this aggregate is used will therefore give better heat and sound insulation. The walls contain a much larger proportion of dead air spaces than one with a denser aggregate.

(*b*) The risk of condensation with cellular concrete is much less with this aggregate than with a denser aggregate.

(*c*) The adhesion of the cement paste binder is probably better with this type of aggregate than with a denser aggregate, due to the greater surface area and numerous small pockets.

(*d*) The practical advantages of this aggregate for cellular concrete are that it will take nails much more readily than where a denser aggregate is used.

No grounds sunk into the concrete are necessary for fixing skirtings, picture rails, door facings, etc. All woodwork may be fixed after the shuttering is removed and without regard to previous preparation by grounds, etc., and may be in any position desired.

(*e*) While cutting through concrete should at all times be avoided, it is sometimes necessary for pipe runs, conduits, etc. It is easier to cut through cellular concrete made of this type of aggregate than where a denser aggregate is used.

Bug Infestation of Timber Houses.

In timber house construction there are more joints and crevices than in a brick house, and these will form a harbourage for bugs. Bugs usually harbour behind door facings, skirtings and picture rails. In timber houses there is the additional harbourage in the walling.

No house can be made absolutely bug-proof, and, although every effort within practical limits should be made to eliminate harbourage, I feel from the experience many have had that other means taken by some large local authorities are more productive of good results. The best method of procedure is to disinfest the tenant, his furniture and bed-clothing where necessary before entry into a new house. Afterwards there should be frequent inspection by trained health visitors to advise and see that the houses are kept clean by the use of soap and water. Some local authorities in Scotland, by adopting this method, have reduced bug infestation in their new houses to not more than 10 per cent. These houses are of brick and stone construction.

I can give you a striking illustration of what can be done to disinfest timber houses.

* A paper read by Mr. John Wilson, F.R.I.B.A., at the Public Health Services Congress.

The Scottish National Housing Company built about 11 or 12 years ago 2,250 so-called steel houses, principally in the Glasgow area. These houses are wooden houses with a thin steel plate as an outer covering in place of timber weather boarding. In 11 to 12 years there have been 15 cases of bug infestation, which works out about 4 per cent. of the houses for the whole period.

These houses are occupied by practically the same class of tenant to be found in local authority housing schemes. The inside wall lining of the houses is of fibre boarding. When a complaint of bugs is received by the company the following operations are carried out. All skirtings, door and window facings and picture rails are taken off and the wall boarding is then removed. The interior timber framing is gone over thoroughly with a blow-lamp and later on sprayed with a strong insecticide. The backs of the various facings and wall boarding are treated with the blow-lamp in the same way and then sprayed with insecticide. The company have found that this treatment has eliminated the bugs.

The officials of this company claim that, while critics may say that a timber house provides greater harbourage for bugs, it is a much easier matter to deal with a timber house affected by vermin by simply removing the finishings and the wall boarding. If any form of plaster is used for wall covering it should be in the nature of plaster boards which are detachable. I am informed that the cost to this company in dealing with bug infestation in 11-12 years has been roughly £100. The danger of bug infestation lies not in the nature of the construction but with the tenant.

Fire Hazard of Timber Houses.

It would seem that in regard to the degree of inflammability the three forms of house construction should be placed in the following order : (1) brick; (2) solid timber; (3) framed timber.

Much can be done in the construction of a timber house to reduce fire risk. The covering of the walls and ceilings with plaster board or ordinary plaster will certainly retard fire and give sufficient time for the evacuation of the tenants. In addition, the construction of a party wall of brick or concrete will confine the fire to one house.

Unfortunately, there is no scientific data on which a quantitative estimate can be based. I find that Glasgow built 368 light timber houses, and in their existence of about 14-15 years no serious fire has occurred. Edinburgh built 140 similar timber houses and in the same period no serious fire has occurred. I am also informed that London County Council erected at Becontree Estate some 12 years ago 205 timber houses and that no serious fire has occurred. In Canada, where timber has been adopted as much the cheapest form of construction which will satisfy the heat-insulating requirements of the Canadian winter, it is considered essential to develop a special fire-fighting technique. The efficiency of the fire-fighting equipment found in Canadian villages appears to be as up to date as that in many a large burgh in England and Scotland.

Heat Insulation of Timber Houses.

The heat losses through external walls are affected so much by windows that there is very little to choose between a brick or timber house. On the whole, judging by the evidence of tenants, it would appear that as long as the timber joints remain fairly tight the timber house is warmer in winter.

Sound Insulation of Timber Houses.

The provision of a concrete party wall isolates the noise of one house from the other —at least in the cottage type. The solid timber wall is much more deficient in sound insulation than the framed timber wall. A very careful system of floor deafening is necessary in a timber house. The problem of sound insulation is an extremely difficult one, and some time may elapse before it can be solved at a reasonable cost.

SANITARY WORK IN LARGE BUILDINGS

A PAPER on this subject, prepared by Messrs. W. C. Easdale, F.R.San.I., F.I.S.E., M.S.E., and Donald Easdale, M.S.E., A.M.I.S.E., was read at a sessional meeting of the Institution of Sanitary Engineers held recently, the President, Lieut.-Col. F. C. Temple, C.I.E., M.Inst.C.E., M.I.Mech.E., F.R.San.I., occupying the chair.

The term " large buildings " in the title of the paper referred, said the authors, to large banks and other office buildings in which staffs varying in number from 400 up to 4,000 were employed. In order to keep the paper within reasonable limits, they continued, it was confined to soil and rainwater drainage and plumbing works and to special features which did not occur in ordinary domestic sanitation. The authors continued :—

Drainage System.

Owing to the very high value of sites of most of these buildings, every effort is made to obtain the greatest possible amount of floor space in the limited area available, with the result that, in addition to eight or more floors above ground level, two and sometimes three floors below ground level are provided. This means that the lowest floor is usually well below the level of the sewer in the street and the drains have to be suspended on walls or from floors.

In preparing the lay-out of the drains, the consulting sanitary engineer has to work to the preliminary drawings of the architect and the structural engineer, and it often happens that the most suitable line for a drain is obstructed by a beam or by some architectural feature. In some cases a less suitable, but still possible, alternative line can be adopted, but where no alternative line is possible, it becomes necessary to ask the architect or the structural engineer to make alterations in their drawings. An arch may be raised or a sub-ceiling provided by the architect. A beam may be reduced in depth by substituting two shallow joists for one deep one, and in some cases holes have had to be cut in the webs of deep beams for the drains to pass through them. When it becomes necessary to make the connection to the public sewer before the building is completed, regard must be had to the fact that such buildings at that stage are still liable to settlement, although it may be very slight. A settlement of one-quarter or one-eighth of an inch would be liable to crack even a cast-iron drain. It is therefore desirable to provide a flexible joint on the sewer connection immediately outside the building or to insert a copper bend.

Having arranged a satisfactory lay-out for the drains, the question of the sizes of the pipes has to be considered. In older buildings a daily consumption of 10 to 12 gallons of water per head per day was usual. In recent years, however, there has been a tendency to provide canteens or, in some cases, luncheon clubs on the premises for the use of the staff and the water consumption has risen to 16 and 18, and in extreme cases to 20 gallons per head per day. Another point to be considered is that there are certain rush hours when the lavatories are used for short periods by large numbers of the staff.

In estimating the maximum flow to the drains from the sanitary fittings it may be assumed that half of the fittings are discharged each minute. Hence the total of the numbers of water closets, basins and sinks connected to one drain may be taken as the maximum rate in gallons per minute. Urinals may be ignored. Baths are unlikely to be emptied during peak periods.

Another and usually the larger factor in calculating the sizes of the drains is the provision to be made for taking rainwater. The whole site of the type of building under discussion is normally covered with impermeable surfaces. In cases of very great area where the drains are of appreciable length and capacity, it is reasonable to calculate the " time of concentration " and use the Ministry of Health formulæ for rainfall intensity. For sites of the order of one acre, the time of concentration is too short for the formulæ to apply, and allowance is made in the capacity of the drains for rainwater run off at the full maximum rate of rainfall, without any allowance for percolation or for time-lag in reaching the drains from the roofs. In several instances provision has been made for taking rainwater at the rate of 2 inches per hour and, in one case, at the rate of 4 inches per hour, as a rainfall at the rate of 3½ inches per hour for several minutes was on record.

A third component of the flow in the drains is provided by discharges from the heating and air-conditioning plants. These are usually intermittent but may be at high rates. Where the proposed rate is such as to increase materially the required size of drain, arrangements can usually be made to limit the rate and to prohibit pumping during the peak flow from lavatories and during heavy rain.

With regard to the gradients at which the drains are laid, it sometimes becomes necessary to adopt flatter gradients than those usually prescribed for small buildings, in order to avoid obstructions or in order to reach the public sewer by gravitation. Owing to the larger volumes discharged during rush hours, the maximum self-cleansing velocity occurs several times every day, and there should be no hesitation in adopting the following gradients if needed—viz., 4 in.—1 in 60, 5 in. —1 in 90, 6 in.—1 in 150, 7 in.—1 in 200, 9 in.—1 in 280, 12 in.—1 in 400.

Sewage Pumping Plant.

In buildings where is becomes necessary to provide sanitary accommodation below the level of the public sewer, suitable pumping plant must be installed. Pumps should always be in duplicate, arranged in such a manner that one is normally in operation while the other acts as a stand-by and automatically comes into operation if the first should fail. The best arrangement is to have two separate complete sets, each consisting of a closed cylinder to receive the sewage, with its outlet at the bottom connected to the suction pipe of an electrically driven centrifugal pump, automatically controlled by a float in the sewage cylinder. The two cylinders should be connected near the top, so that if one pump fails the sewage will overflow into the other cylinder and be dealt with by the stand-by pump.

In the foregoing it has been assumed that no sanitary fittings will be fixed on the lowest floor of the building. This is very desirable, as if drains have to be laid in the lowest floor, the necessary sewage and pump wells have to be constructed below the foundations, and it is often extremely difficult to make them watertight. The delivery pipe from the sewage pumps is usually connected into the main gravitating drain from the upper floors. This connection should be made preferably into an inspection chamber which is well ventilated or a separate vent pipe taken up off the top of the delivery main. The two sewage cylinders should also be connected to a separate ventilating pipe carried up to the roof or into a conveniently situated soil vent pipe.

Soil System.

For the sizes of soil and vent pipes, as for drains, calculations might be based on the flow capacities given in the United States Plumbing Code. These figures are based on the theory of probabilities and confirmed by practical observations. While covering soil pipes up to 8-in. diameter and vent pipes up to 10-in. diameter, they permit the connection of 64 water-closets with flushes of not less than 4 gallons to a 4-in. soil pipe.

Hence, in buildings subject to the height limits of by-laws such as those of the London County Council and with the normal 2-gallon water-closet flush, the standard 4-in. soil and 3-in. vent pipes are capable of dealing with the discharge from many more water-closets than are likely to be connected to one stack.

Waste System.

Except where only two or three basins are connected, it is usual to use a 3-in. waste pipe and a 2-in. vent. pipe. Although the

number of basins connected is usually only a small proportion of the 72 permitted by the United States Plumbing Code, the use of these sizes is justified by freedom from stoppages.

Gullies for the wastes from wash-basins, sinks and baths are usually situated in areas, and any odours arising from them are liable to rise and be drawn into the open windows of offices on the upper floors. It is therefore necessary in many cases, especially for kitchen wastes, to provide gullies with sealed covers and separate ventilating pipes carried up to the roof. Rainwater pipes from eaves gutters should not be connected to such sealed gullies, as this may defeat the object of keeping smells away from windows.

One-pipe System.

The one-pipe system, which is now legal in the Metropolis, should be seriously considered in all future plumbing projects. In addition to eliminating the troublesome gulley and its drain connection, its practical effect is to dispense with the whole of the vertical piping of the waste system, including the vent pipes from sealed gullies. The 4-in. soil pipe and 3-in. vent pipe are normally required except in the occasional case where no water-closets are connected to a stack, when the appropriate waste-pipe size may be used.

Rainwater System.

The question of the rate of rainfall to be allowed for was discussed in considering the drainage system. For the eaves gutters and down pipes of an ordinary dwelling-house, a principle sometimes applied to storm-water sewers may be used. In order that a self-cleansing flow may occur with sufficient frequency, the capacity is made inadequate for the two or three heaviest storms of the year. While such a storm is in progress, overflow from eaves gutters is of no importance.

In considering the drainage of rainfall from the roofs and areas of city buildings, this principle must be entirely forgotten. Provision must be made for taking the whole of the precipitation at the maximum rate on record. Architectural and structural considerations usually indicate likely positions of down pipes, and design consists not so much in determining pipe sizes as in providing a sufficient number of pipes. Except for very small areas or in positions where pipes of special shape are required by the architect, 4-in. diameter down pipes are normal. From an examination of the plans, the largest area draining to one outlet is noted, and the run-off from this area at the maximum rate of rainfall is checked to be within the capacity of the outlet.

It is to be noted that the capacity of the outlet is normally very much less than that of the down pipe. With a suitable entry, the maximum free flow down a 4-in. vertical pipe is over 800 gallons per minute. With an entry of the pipe size only, as commonly cast on eaves gutters, a head of 2 in., wasting 2 in. depth of the gutter, discharges only 100 gallons per minute into a 4-in. pipe. Thus, except in cases where the gutter and pipes carry little water and are primarily an architectural feature, an eaves gutter should have an open end discharging freely into a rainwater head of which the bottom tapers down to the pipe spigot. Outlets from flat roofs and cornice gutters should be of trumpet shape and, for a 4-in. pipe, not less than 12 in. clear diameter at the top. To reduce the risk of stoppage, the grating should be a high dome. To avoid heading up on the roof, the lip of the trumpet should be set about 3 in. below the local surface, which may slope steeply to it.

In some cases portions of the building may have flat roofs, overlooked by windows the cills of which may be not more than 6 in. above the roof. In such cases, and in fact for every separate portion drained, it is essential to provide two or more outlets for the rainwater in case one should be choked.

Where a drain or the upper part of a drain receives rainwater only, it is preferable to connect the down pipes untrapped and to use trapless gulleys for surfaces at ground level. Ventilation is thus provided and air-locking prevented. A trap is, of course, interposed before joining the soil drain or sewer. For connection inside the building of rainwater pipes to soil drains, unvented sealed gulleys may be used. Rainwater, by heading up in the down pipe, will break down any air-lock caused by surcharge in the drain.

Materials.

Cast iron pipes may be used for soil pipes where the arrangement is straightforward, but in these large buildings this is not always the case. Occasionally these pipes have to be fixed inside the building, in odd corners, or carried across ceilings, or along corridors in sub-ceilings, and in such cases lead pipe is much more convenient than cast iron. In any case the upper portions of soil pipes above the top-most connection, acting as vent pipes, should always be of non-ferrous material.

The above remarks apply equally to main down pipes for wastes from wash-basins, sinks and baths, although some excellent installations of waste pipes have been carried out in light copper tubing with gun-metal or copper fittings and compression joints. This type is also specially suitable for the waste and anti-syphon pipes immediately underneath the wash-basins. Lavatories are, however, often situated in positions which make it difficult to use rigid pipes like cast iron, or copper, and in such cases lead will be found to be the most convenient material to use. All vent pipes and anti-syphon pipes should be of non-ferrous material to prevent trouble from corrosion and from the accumulation of rust inside the pipes.

The whole of the drainage and plumbing work is specified to be completed to the satisfaction of the sanitary engineer and of the local authority. While the sanitary inspector may not require to see tests on the whole of the work, the engineer should omit nothing from his tests. The prudent plumber, of course, tests each part as completed and rectifies any faults so that the final tests are normally entirely successful.

Sanitary Fittings.

Any attempts to discuss the merits of the multitude of different types and makes of sanitary fittings would be futile and a dangerous proceeding. Each maker has many types which are claimed to be improvements on similar fittings supplied by other makers owing to slight differences in construction or material. A personal inspection of the fittings at the showrooms of the principal firms would appear to be the best way to make a selection, but after a round of such inspections at three or four showrooms, the impression that remains in one's mind is of such a galaxy of magnificent fittings of many patterns and qualities that the selection of those required for a particular building is extremely difficult. Although it is not always possible, it is desirable that the whole of the fittings for one building should be obtained from one maker in order to avoid complications in connection with deliveries and to prevent division of responsibilities.

The method usually adopted by the authors is to prepare a specification in great detail of all the fittings required, describing the materials of which each part is made, the dimensions, colours, joints, etc., minutely, and, in fact, leaving nothing to the peculiar idiosyncracies of the makers. Several firms are then asked to submit quotations based on this specification, with the result that competitive prices are obtained for identical fittings. The two firms whose quotations are the lowest are then requested to have samples of the fittings prepared for inspection at their showrooms, and it is thus possible to compare quality and price and arrive at a decision as to which quotation should be accepted.

Fixing of Fittings.

In buildings of the size dealt with in this paper, the number of fittings required is considerable and the fixing of them is an important part of the plumbing contract. Before any fittings can be fixed they must be delivered on the job, and this is where troubles begin. They may be ordered in good time and full details given as to which items will be required first, but in spite of this the first consignment often consists of those which will be fixed last. Meanwhile the plumbing contractor has difficulty in finding space in which the fittings can be stored without risk of damage until they can be fixed.

Another matter for complaint is to have fittings delivered in an incomplete state. After repeated urgings to the manufacturer to hasten delivery of fittings urgently required, the plumbing contractor may receive an advice stating that certain w.c. sets and ranges of wash basins have been despatched, but with footnotes stating "brackets and flush-pipes for w.c.s and brackets and taps for basins *to follow*"! Such occurrences are very irritating and it should be possible to prevent them.

The fixing of urinals on suspended floors presents some difficulties. It is advisable to have the number and positions of these fittings definitely settled at an early stage of the contract. The structural engineer may then be asked to arrange his steelwork in such a manner that a trough can be formed in the floor, of the requisite depth and width to allow the urinal stalls to be fixed with the lip of the channel, or base, level with the finished floor surface. In some cases this difficulty is overcome by fixing the urinals in a platform above the floor level, but this involves a step, 7 in. or 8 in. in height, which may cause accidents to careless users. Another disadvantage of the platform is that the lavatory floor cannot be swilled down with a hose as in the case where the urinal channel is below the floor level.

A source of worry to the plumbing contractor is that he often has to fix pipes through the wall or floor, and fit up the supports for sanitary fixtures before the plastering, tiling or finishing in terrazzo is done. This means that he must practically complete the installation of fittings and piping, and then take the whole down and store it. When the wall and floor finishes have been done he has to bring all back again and refix. In some cases he could cover up the fittings and pipe work while plastering is being done, but, in spite of such protection, so much damage is often done by actual breakage and by splashes of plaster and cement on the fixtures and pipework that it is usually cheaper, and in every way more satisfactory, to adopt the former method of procedure.

Conclusion.

All plumbing and drainage work must be designed and executed in accordance with the appropriate printed by-laws. It is found, however, that the interpretation of the by-laws varies in different districts, and the first duty of the sanitary engineer is to familiarise himself with the unwritten by-laws of the local authority. Much may be learned by submitting preliminary plans at a very early stage and discussing them with the officials concerned, so that the works may be designed from the start to their satisfaction.

Although there are always many problems to be solved and difficulties to be overcome by the sanitary engineer in connection with the erection of large buildings, they can usually be settled satisfactorily by amicable co-operation between all those engaged on the work. This includes the architects, the structural and mechanical engineers, the clerks of works, and the principal contractor and sub-contractors.

Kent C.C. Buildings Department: Annual Dinner.

The staff of the Buildings Department of the Kent County Council held their third annual dinner at the Royal Star Hotel, Maidstone, on January 3. Mr. W. R. Elgar, a prominent member of the County Council, and Mr. C. Tuff, the Chairman of the Buildings Committee, were the guests.

Major W. H. Robinson, F.R.I.B.A., the County Architect, was unfortunately unable to attend owing to a sudden illness, and Mr. S. H. Loweth, F.R.I.B.A., the Deputy County Architect, presided in his place. The dinner was attended by 109 members of the staff of the Department and speeches were made by Mr. Elgar, Mr. Tuff, the Deputy County Architect, and three members of the staff.

NEW BUILDINGS IN LONDON

ALPERTON.—FLATS.—Mr. H. Kenchington, F.R.I.B.A., 7, Staple Inn, Holborn, W.C.1, is the architect for 60 flats, 14 shops with flats over and 12 garages in Ealing-road. No contracts placed.

BERMONDSEY.—EXTENSIONS. — No contracts have yet been placed for extensions to the factory of Messrs. Peek, Frean and Co., Ltd., in Keetons-road, Drummond-road. The architects are Messrs. Arthur W. Cooksey and Partners, 6, Adam-street, W.C.2.

BERMONDSEY. — GARAGE, ETC. — Plans have been submitted to the L.C.C. and B.C. for erection of garage and filling station with showroom and offices, at 178-183, Blue Anchor-lane, for the Bermondsey Motor Co., Ltd., 12a, Jamaica-road. Mr. J. F. Learner, 43, Charterhouse-road, Orpington, submitted the plans to the Council.

BERMONDSEY. — ALTERATIONS. — Messrs. Barclay, Perkins and Co., Ltd., Park-street, S.E.1, are to make extensive alterations and additions to the "Royal Fort" public-house, 131, Grange-road, S.E.1. Plans have been prepared by the company's architect. No contracts let.

BERNERS-STREET.—REBUILDING.—Of the showrooms and offices at Nos. 41-42 is to be carried out for clients of Messrs. Davis and Co., 56, Berners-street, W.1. The architects are Messrs. Robert Angell and Curtis, 133, Regent-street, W.1, and the contractors are Messrs. G. E. Wallis and Sons, Ltd., 8, Duncannon-street, W.C.2.

BRENTWOOD.—HOUSES. — U.D.C. have approved plans by Council's Engineer for 42 houses on the High Wood housing site.

BROCKLEY.—FLATS.—The Lewisham B.C. has passed plans for Mr. J. Giles to erect two blocks of flats adjoining 174, Grierson-road, Brockley.

BRUTON-STREET.—OFFICES.—And showrooms, together with branch premises for Martins Bank, Ltd., Liverpool, are to be erected at No. 11, with frontages to South Bruton-mews. The plans have been prepared by Mr. Donald Hamilton, F.R.I.B.A., 356, Oxford street, W.1.

CAMDEN TOWN. — ALTERATIONS. — And additions are being made to the "Prince Albert" public-house, 51-53, Great College-street, N.W.1, for Messrs. Charrington and Co., Ltd., Anchor Brewery, Mile End-road, E.1. The plans have been prepared by Mr. S. J. Funnell, L.R.I.B.A., the brewery architect, and a contract placed with Messrs. Wm. Loweth and Sons, Ltd., 67, Downs Park-road, E.8.

CAMDEN TOWN.—ALTERATIONS.—The St. Pancras B.C. are to spend £4,820 on alterations and renovations at 72, 74 and 76, Camden High-street, to form a new air raid precautions headquarters.

CATERHAM. — ALTERATIONS. — And additions are to be made to showrooms, 59-67, Croydon-road, for the Caterham Motor Co., Ltd. The architects are Messrs. Rix and Rix, High-street, Burnham, Bucks.

CHADWELL HEATH. — SHOPS. — Messrs. Christie and Co., 7-9, Baker-street, W.1, have submitted plans to the Dagenham U.D.C. for 10 shops and flats over and lock-up garages at rear, south side of the High-road. Mr. H. D. Kidd, F.R.I.B.A., 12, Buckingham-street, W.C.2, is the architect, and no contracts have yet been placed.

CLAPHAM. — MAISONETTES. — Messrs. Bridge, Walker, Ltd., 91, Effra-road, S.W.2, are erecting eight maisonettes and four garages at 185, King's-avenue, S.W.4. The architect is Mr. Wilfrid E. Edleston, A.R.I.B.A., 7, Park-lane, W.1.

CLAPHAM.—SCHOOL.—The Wandsworth B.C. has received notice that the trustees of St. Bede's R.C. Church, Clapham, propose to provide a new public elementary school for about 250 infant and junior children at 62, Thornton-road.

CLAPHAM COMMON.—EXTENSIONS. — Are to be made to the premises of Messrs. Rose, Ltd., at North Side. Messrs. Searle and Searle, 34, Paternoster-row, E.C.4, are the architects, and Messrs. J. Garrett and Son, Ltd., 83, Balham Hill, S.W.12, are the builders.

COCKFOSTERS.—CHURCH.—A new Congregational church is now being erected in Freston-gardens by Messrs. Melsom and Rosier, 73, Canning-road, Wealdstone. The architect is Mr. John P. Blake, 24a, Bath-road, Hounslow.

CRANFORD.—SCHOOL.—The Heston and Isleworth T.C. has accepted the estimate of Messrs. W. J. Drinkwater and Sons (Feltham), Ltd., 107, Bedfont-lane, Feltham, at £15,269, for the erection of an infants' school (450 places) at Berkeley-avenue. Mr. J. G. Carey, Assoc.M.Inst.C.E., Borough Surveyor, prepared the plans.

CURZON-STREET.—PREMISES.—The premises on the site of 1 to 4 and 62 to 72, Curzon-street, 20 to 26, Clarges-street, and 6 to 12, Clarges-mews are to be demolished to make way for new office premises. The architects are Messrs. Gunton and Gunton, Empire House, St. Martin's-le-Grand, E.C.1, and the contractors are Messrs. Humphreys, Ltd., Knightsbridge, S.W.7. Messrs. John D. Wood and Co., Berkeley-square, carried through the sale of the Curzon-street site.

CURZON-STREET.—FLATS. — Plans have been prepared by Messrs. Trehearne and Norman, Preston and Co., Windsor House, Kingsway, W.C.2, for the development of the site of No. 61, with frontages to Bolton-street, W.1, by the erection of block of luxury flats. The contract will be carried out by Messrs. Gee, Walker and Slater, Ltd., 3, Fitzmaurice-place, W.1.

DAGENHAM.—HOUSES.—The T.C. has passed plans for Mr. T. A. Clark, builder, 96, Hainault-road, Chadwell Heath, for 33 houses and garages on the south side of Eastern-avenue.

DAGENHAM.—HOUSES.—Mr. J. L. Bibby, builder, 2, Mapleleafe-gardens, Ilford, is erecting 41 houses in Valentines-way. The plans have been approved by the T.C.

EALING.—ADDITIONS.—Are being made to the factory in Belvue-road, for Messrs. Tampax, Ltd. The architect is Mr. G. A. Hobden, 58, Theobalds-road, W.C.1. No contracts placed.

EAST HAM.—HOUSES.—The Public Health Committee of the C.B. has recommended the Council, subject to confirmation by the M.H., to approve the proposed site of the off-licence premises at the corner of Elizabeth-street and High-street, and the borough engineer's proposals to erect five two-bedroom, eighteen three-bedroom, and five four-bedroom type houses, and seven three-bedroom houses on portion of Storey-street school site at £18,573. The Borough Engineer is to be directed to invite tenders.

EAST BARNET.—FLATS.—A preliminary plan for the suggested development of land between Pymmes Brook and the rear of shops in Park-parade, Church Hill-road, East Barnet, providing for the erection of 20 flats and seven garages, has been submitted by Mr. L. T. Swanne to the U.D.C.

EDGWARE-ROAD.—DEPOT.—The L.P.T.B., 55, Broadway, S.W.1, are to transfer the Lambeth North Training School to new buildings, to comprise school, lecture hall, stores, etc., to be erected in Edgware-road and Marylebone-road, W. The Board's chief architect is Mr. S. A. Heaps, L.R.I.B.A. The builders are Messrs. Holliday and Greenwood, Ltd., 11, Buckingham Palace-gardens, S.W.1.

ESSEX. — BUILDING. — The C.C. has approved amended sketch plans for the erection of the senior school in Whitehall-road, Chingford, at £33,175. Accommodation will be provided for about 480-560 pupils. Sketch plans also approved for the erection of a second department at the South Hornchurch council junior school, to provide accommodation for 450-500 children, at £10,931. The Council has recommended the erection by direct labour of 10 cottages, etc., at Brentwood Mental Hospital at £5,663. The M.H. has approved the scheme of the Public Assistance Committee for the erection of new relief offices at Laurie-square, Romford.

FELTHAM.—HOMES.—Work is to be commenced at once on the superstructure for the new St. Vincent's Homes for the Crusade of Rescue. The estimated cost is £35,000. The architect is Mr. E. Bower Norris, F.R.I.B.A., of 134, Newport-road, Stafford, and 20, Bedford-row, W.C.1.

FULHAM.—DWELLINGS.—The B.C. has recommended two blocks of dwellings proposed to be erected on the land in Munster-road at £14,880. The plans are by the Borough Surveyor, and Messrs. C. E. Ball and Partners, Dilke House, Malet-street, S.W.1, are the quantity surveyors.

FULHAM.—EXTENSIONS.—The tender of Messrs. Higgs and Hill, Ltd., Crown-works, South Lambeth-road, S.W.8, has been accepted for the foundations in respect of further extensions of the power station in Townmead-road, S.W.6. The tender price is £101,135.

GREAT ORMOND-STREET. — GARAGE. — Messrs. G. Bailey and Sons, Ltd., have placed a contract with Messrs. John Mowlem and Co., Ltd., Ebury Bridge-works, S.W.1, for a garage and stores. The plans have been prepared by Messrs. Percy H. Clarke and Sons, 5, Arundel-street, W.C.2. The quantity surveyors are Messrs. Horace W. Langdon and Every, 292, High Holborn, W.C.1.

HACKNEY. — FACTORY. — Messrs. R. Schooley and Son, 5, Snowdon-street, E.C., have the contract for a factory and offices at Richmond-road, E.8. The plans have been prepared by Mr. W. H. Scanlan, F.S.I., 56, Buckingham-gate, S.W.1.

HACKNEY WICK.—PREMISES.—Are to be erected in Lea Conservancy-road, for Messrs. G. Ellis and Co. Mr. S. B. Caulfield, 27, Emperor's-gate, S.W.7, is the architect. Tenders are now being invited.

KILBURN. — FLATS. — Major Graham Doyle, F.S.I., 11, Suffolk-street, S.W.1, is preparing the quantities for the flats at "The Firs," 18-24, Shoot-up Hill. Messrs. Alfred Ospalak and Co., 25, Victoria-street, S.W.1, are the architects.

KINGSTON.—GYMNASIUM.—For the erection of a gymnasium at the Bonner Hill-road central school for girls, the E.C. has recommended the acceptance of the tender of Messrs. E. R. Terry, Ltd., of Harrow, at £5,700.

KINGSTON.—STATION.—The L.P.T.B. are to erect in London-road a trolleybus substation. The plans have been approved by the T.C., and no contracts have yet been placed.

LEYTON.—ADDITIONS.—Mr. R. J. Coles, 76, Gordon-road, Woodford Green, is the architect for the conversion of shops into dwelling houses, at 30-32, Capworth-street. The building contract is about to be placed.

LEYTON. — ALTERATIONS. — Messrs. Charrington and Co., Ltd., Anchor Brewery, Mile End-road, E.1, are to have alterations made at "Colegrave Arms" public-house, Cann Hall-road. The plans are by the company's architect, Mr. S. J. Funnell, L.R.I.B.A. No contracts placed.

LEYTON.—HALL.—No contracts have yet been placed for a hall at the rear and alterations at 24 and 26, Fairlop-road. The architects are Messrs. Murrell and Pigott, FF.R.I.B.A., 44, Bedford-row, W.C.1.

LIME-STREET.—OFFICES.—The City of London Real Property Co., Ltd., proposes to build a block of offices at 40, Lime-street, and 2-12, Fenchurch-avenue, E.C.2. The plans have been prepared by Messrs. Henry Tanner, 3, Hanover-square, W.1. No contracts placed.

LONDON.—BUILDING.—The L.C.C. has approved £10,130 in respect of the erection of a new relief station at Parkdale-road, Woolwich, and £5,000 in connection with the erection of new dwellings, etc., on the Bethnal Green (No. 1) redevelopment area. £5,107 is to be spent on the erection of dwellings, etc., on the Redcross-street areas, Southwark. A grant is to be made to the managers of the schools in the provision of new senior accommodation at the premises of the former Clapham High School.

LOUGHTON.—SHOWROOMS.—Messrs. T. H. Adamson and Sons, 145, Putney High-street, S.W.15, are erecting for the Gas Light and Coke Co., Ltd., new showrooms at Loughton. Mr. Michael Tapper, F.R.I.B.A., 1, St. Leonard's-terrace, S.W.3, is the architect.

MILL HILL.—ADDITIONS.—Are to be made to the nursing home at the Linen and Woollen Drapers' Institution, Hammers-lane, N.W., for which a contract has been placed with Mr. H. Phillips, The Ridgeway, N.W.7. The architects are Messrs. Hall-Jones and Partners, Parliament-mansions, Victoria-street, S.W.1.

MILLWALL DOCKS.—RECONSTRUCTION.—Of the north quay, including the erection of two two-storey transit sheds, is contemplated by the P.L.A. The cost is estimated at £200,000, and tenders will be invited from selected firms in about two months. The plans have been prepared by the chief engineer, Mr. W. P. Shepherd-Barron, M.Inst.C.E., Trinity-square, E.C.3.

NEW BOND-STREET. — SHOPS. — Showrooms and offices are to be erected at No. 138, to the designs of Mr. Brian L. Sutcliffe, F.R.I.B.A., 5, Manchester-square, W.1. The contract has been placed with Messrs. C. P. Roberts and Co., Ltd., 31, High Holborn, W.C.1.

NORTH KENSINGTON.—CENTRE. — The Welfare Committee of the Kensington B.C. has recommended the Council to approve in principle the erection of a health centre on the site of the present Raymede infant welfare centre, 240, Ladbroke-grove, and the sites of the adjoining properties, 242, 244, 246 and 248, Ladbroke-grove, and 2, 4, 6 and 8, Telford-road. The Committee has decided to engage the services of Messrs. Stanley Hall and Easton and Robertson, of 54, Bedford-square, W.C.1, and the estimated cost is £87,500.

RAINHAM.—CHAPEL.—Is to be erected for the La Salette Fathers. Mr. Wilfred C. Mangan, F.R.I.B.A., 36, Southampton-street, W.C.2, is the architect, and Mr. A. Saunders, Western-road, Brentwood, is the builder.

RICHMOND.—ADDITIONS.—The E.C. are inviting tenders for alterations and additions to the Vineyard council school. Messrs. Swan, Norman and Clay, 172, Buckingham Palace-road, S.W.1, are the architects.

ST. JOHN'S WOOD.—FLATS.—The Western Heritable Investment Co., Ltd., 27b, Davies-street, W.1, is to build a block of 75 flats at 6, Hall-road, N.W. The work will be carried out by the company's building department. The plans have been prepared by Mr. J. Wilson, A.R.I.B.A., 200, St. Vincent-street, Glasgow.

SOUTH HARROW.—HOUSES.—Mr. Thomas Currey, Bush Hill-park Station estate, Enfield, is to erect houses on the old Nealson sports ground in the Northolt-road.

SOUTH HARROW.—EXTENSIONS.—Large extensions are now being erected at the rear of the "Tithe Farm" public-house in Alexandria-avenue by Messrs. A. and B. Hanson, Ltd., 44, Featherstone-road, Southall.

SOUTH KENSINGTON. — EXTENSIONS. — H.M.O.W. are inviting tenders for extension to entomological block, Natural History Museum.

SOUTHWARK.—FACTORY. — New factory premises are being erected in Disney-place, S.E.1, for Messrs. Paice and Endicott. The architects are Messrs. P. C. Boddy, F.R.I.B.A., and D. Gainsborough Waring, F.S.I., 19 and 21, Palace-street, S.W.1, and the builder is Mr. C. B. Durston, King's-road, Brentwood.

SOUTHWARK.—BATHS.—The B.C. are proposing to construct swimming baths and wash-houses at £160,000. The plans have been prepared by Mr. Biggs, of the Borough Council. No contracts placed.

STAINES.—EXTENSIONS. — H.M.O.W. are inviting tenders for extension of the head post office and garage.

STEPNEY.—DWELLINGS.—The B.C. are to invite tenders for 31 dwellings on the site of West India House, West India Dock-road. The plans have been prepared by Mr. B. J. Belsher, F.R.I.B.A., borough engineer and surveyor.

STEPNEY. — BUILDING. — Messrs. Howis and Belcham, 9, Fenchurch-street, E.C.3, are the architects for the erection of a building at 18, Alie-street and 14-16, North Tenter-street. The building contract has been placed with Messrs. Bridge, Walker, Ltd., 91, Effra-road, S.W.2.

STEPNEY. — REBUILDING. — Mr. A. Whitaker, F.I.A.A., 16, Fords-grove, N.21, is the architect for the rebuilding of a workshop with a garage in the basement at 19-25, Camperdown-street.

STEPNEY.—ADDITIONS.—No contracts yet placed for the additions at "Waterman's Arms" beer-house, in Maroon-street. Messrs. Stewart and Hendry, FF.R.I.B.A., 90, Fenchurch-street, E.C.3, are the architects.

SUTTON.—DEPOT.—H.M.O.W. has placed a contract with the Commercial Structures, Ltd., Staffa-works, Staffa-road, Leyton, E.10, for a P.O. engineering depot.

TOTTENHAM. — HOUSES. — The Housing Committee of the T.C. has accepted, subject to conditions, the tender of Mr. David Nott, of Luton, at £15,660, for 36 houses on the Scotland Green estate. The plans are by the Borough Engineer.

TOTTENHAM.—HOUSING.—The Housing Committee of the T.C. has recommended the Council to approve the scheme prepared by the Borough Engineer for the development of the Cornwall-road clearance area by erecting 41 houses at £27,350.

TOTTENHAM. — CHURCH. — The London Diocesan Fund, 33, Bedford-square, W.C.1, are having a new church, to be known as St. John the Baptist, erected in Great Cambridge-road. The architect is Mr. Paul Paget, of Messrs. Seely and Paget, 41, Cloth Fair, E.C.1.

TOTTENHAM.—PAVILION.—The tender of the Kent and Sussex Building Co., Ltd., Ideal House, Carlton-road, Erith, at £4,027, has been provisionally accepted for erection of a pavilion in Markfield recreation ground: King George's Field.

TOTTENHAM.—EXTENSIONS.—Preliminary plans for extensions to the premises of Messrs. R. Rosenblatt and Sons, in Vale-road, have been approved by the T.C.

WALTHAMSTOW.—EXTENSIONS. — Messrs. P. C. Boddy, F.R.I.B.A., and D. Gainsborough Waring, F.S.I., 19 and 21, Palace-street, S.W.1, are the architects for the further extensions now being carried out to the factory in Argall-avenue, and not as stated in our last issue.

WEMBLEY.—FLATS.—Messrs. Sage and Dennis, builders, 49, Balmoral-road, South Harrow, are erecting 17 flats on the site of "Dutch House" in Empire-way.

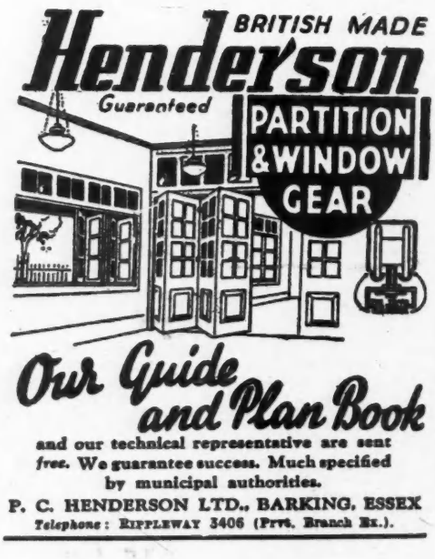
WEMBLEY. — FACTORY. — Mr. Frank Durrant, 114, Cheapside, E.C.2, is the architect for the erection on behalf of Messrs. Hiron and Rempler, Ltd., of a new factory on the north side of Heather Park-drive, adjoining the railway. The contractors are Messrs. Cripps Construction Co., Ltd., 116, Putney Bridge-road, S.W.15.

WEMBLEY.—BUILDING.—The T.C. has passed plans for Messrs. Dessoutters, Ltd., for a new office block in Edgware-road.

WILLESDEN. — EXTENSIONS. — Are being made to the works in Hythe-road, N.W.10, for Triplex Glass Co. The architect is Mr. R. W. Lone, 15, New-square, Lincoln's Inn, W.C.2, and the builders are Messrs. F. G. Minter, Ltd., Ferry Works, Putney, S.W.15.

WOOLWICH.—ADDITION.—The governors of the Woolwich Polytechnic have accepted the tender of Messrs. Nox, Ltd., 55, New Bond-street, W.1, for the rebuilding of the laboratory block. The cost is estimated at about £25,000. Plans have been prepared by Mr. J. H. Anderson, head of the Polytechnic Building Department, whilst the quantities are by Messrs. E. C. Harris and Partners, 3, Bedford-square, W.C.1.

YIEWSLEY.—VICARAGE.—Plans have been prepared by Messrs. Gordon Jackson and Rees, 1, Gray's Inn-place, W.C.1, for a vicarage, etc. The quantity surveyors are Messrs. C. E. Ball and Partners, Dilke House, Malet-street, W.C.1.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PUBLIC WORKS

BRISTOL.—The City Council have approved recommendations for extensions to Bristol Airport, estimated to cost £70,000.

GREAT BRITAIN. — Among contracts advertised in this issue by local authorities as being open to tender are: Abingdon R.D.C.—16 dwellings, Steventon; Middlesbrough Diocesan Trustees—senior R.C. sch., South Bank, Eston, Yorks; North Riding E.C.—senior sch., Newby, nr. Scarborough; Gateshead C.B.—nurses' home, High Teanes Institution; Dorchester Borough—24 houses, Victoria Park; East Suffolk C.C.—area coun. sch., Halesworth; Hertford Borough—open-air swimming pool and other works, Hartham; Borough of Stockton-on-Tees—maternity home, etc., Newham Grange; Metropolitan Water Board—offices, St. John's-road, Sidcup; Southgate B.C.—pair of gardeners' cottages, Isolation Hospital, Tottenhall-road; Brecon C.C.—isolation hospital; Manchester Corp.—18 houses at Parkside-road, Wilbraham-road estate, Fallowfield.

GREAT BRITAIN (Miners' Welfare Fund).—The Miners' Welfare Committee announce that building tenders are about to be invited for pit-head bath installations at Chalmerston (Ayrshire), for 352 men; Rufford (Nottinghamshire), for 1,392 men; Parkhouse (North Staffordshire), for 612 men; Radstock (Somerset), for 396 men; Llanhilleth (South Wales) for 912 men.

GREAT BRITAIN (Ministry of Health).—Following are notes on some loans sanctioned by the Minister of Health during the fortnight ended December 31: Barking B.C.—£27,270 for 48 acres of land for housing purposes. Scrattons Farm; Colchester B.C.—£94,292 for works of sewerage and sewage disposal; Coventry C.C.—£13,167 for layout of cemetery and provision of crematorium, Canley; Folkestone B.C.—£20,654 for completion of promenade and sea wall, East Cliff; Halifax C.B.—£134,160 for erection of 242 houses and 50 bungalows, Bachold-lane site; 60 houses and 50 bungalows, Nurserylane site; Hoyland U.D.C.—£42,480 for 124 houses and construction of roads and footpaths, Cobar-street housing site; Reading C.B.—£25,184 for 72 dwellings, Whitley Housing Estate; Sandown-Shanklin U.D.C.—£19,827 for works of water supply; Torquay B.C.—£76,320 for works of sewerage and sewage disposal; Royal Tunbridge Wells B.C.—£22,679 for purchase of Corn Exchange and Sussex Assembly Rooms and other property for improvement of the Pantiles; West Bromwich C.B.C.—£42,914 for public elem. sch., Hall Green-road; Whitehaven B.C.—£54,731 for 166 dwellings and construction of roads and sewers, Hensingham No. 2 Scheme; Wilts C.C.—£53,870 for the Trowbridge Sen. Counc. Sch.; York C.C.—£98,986 as instalment of the expenditure on scheme of sewerage and sewage disposal, estimated to cost approximately £250,000.

STOKE-ON-TRENT.—The City Council has decided to forward to the Livestock Commission a £204,000 scheme for the building of a new abattoir at Fenton, of a type which would be suitable as a central slaughter-house under the Livestock Industries Act, 1937.

YORK.—The T.C. is recommended to accept the tender of Concrete Piling, Ltd., of London, for the construction of foundations of the new municipal offices at the price of £19,275.

NEW CINEMAS

BRADFORD.—Messrs. Anderton and Burnieston, Midland-chambers, Shipley, are the architects for the erection of a cinema to seat 1,100, on the site of the old Arcadian Pavilion at Lidget Green, for the Glenroyal Cinema Co., Ltd.

DURHAM (BROOMHILL).—Mr. J. N. Fatkin, 17, Bigg Market, Newcastle-on-Tyne, is the architect for the erection of a cinema. No contracts let.

JOHNSTONE. — Messrs. Lennox and MacMath, 103, Bath-street, Glasgow, are the architects for a cinema to be erected on a central site.

TWICKENHAM.—Messrs. Hunter and Clark, Ltd., 7, Buckhold-road, Wandsworth, S.W.18, have secured the contract for the erection of the Regal cinema for Associated British Cinemas, Ltd., 30, Golden-square, W.1. Mr. W. R. Glen, F.R.I.A.S., is the architect.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary. The dates at the head of paragraphs are those for the submission of tenders: a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained. Abbreviations: (A.) for A.R.I.B.A.; B. of E. for Board of Education; B.C. for Borough Council; B.E. for Borough Engineer; B.S. for Borough Surveyor; C. for Clerk; C.B. for County Borough; C.C. for County Council; C.E. for County Engineer; C.S. for County Surveyor; D.S. for District Surveyor; E. for Engineer; E.C. for Education Committee; (F.) for F.R.I.B.A.; (L.) for L.R.I.B.A.; M.W.B. for Metropolitan Water Board; M.H. for Ministry of Health; M.T. for Ministry of Transport; P.C. for Parish Council; R.D.C. for Rural District Council; S. for Surveyor; T.C. for Town Clerk and Town Council; and U.D.C. for Urban District Council.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, &c.

JANUARY 14.

***Bedfordshire C.C.**—Extensions and heating installation at St. Peter's Hospital. County Architectural Dept. Dep. £3 3s. each.

JANUARY 16.

†Birmingham T.C.—617 houses, 104 maisonettes and 24 bungalows, Kents Moat estate, Stechford. E. and S. Dep. £3 3s.

***Hertford T.C.**—Open-air swimming pool at Hartham. Kenneth M. B. Cross (F.), 45-6, New Bond-st., London, W.1. Dep. £2 2s.

***Newcastle-upon-Tyne.**—Extensions to ward block, boiler-house, etc., at Tynemouth Victoria Jubilee Infirmary. Cackett, Burns-Dick & MacKellar, 21, Ellison-pl. Dep. £5 5s.

***Newcastle-upon-Tyne.**—Electrical installation, heating and hot water services to proposed extensions to ward block, boiler-houses, etc., Tynemouth Victoria Jubilee Infirmary. Cackett, Burns-Dick & MacKellar, 21, Ellison-pl. Dep. £3 3s. each.

†Soke of Peterborough C.C.—Alterations to wards at public assistance institution. C. Dep. £3 3s.

JANUARY 17.

***Essex C.C.**—Romford Straight-rd. Junior and Infants' School—temporary building; alterations and additions to casual wards at Orsett Institution. J. Stuart (F.), County Architect, Chelmsford. Dep. £1 1s. each.

***Kent C.C.**—Combined health centre at Foster-st., Maidstone. W. H. Robinson (F.), Springfield. Dep. £5 5s.

***Richmond (Surrey) T.C.**—Additions and alterations to Vineyard council school. Education Secretary. Dep. £1 1s.

***Staffordshire C.C.**—Additions, etc., to boys' school at Knypersley, Biddulph. Director of Education, Stafford. Dep. £3 3s.

JANUARY 18.

Banstead U.D.C.—Decorations to houses. S.

Camberwell B.C.—Tendering for building works. B.E. and S., Peckham-rd., S.E.5.

Caernarvonshire C.C.—Additions and alterations at Dolwaen, Bangor-rd., institution, Conway, and Blodwel children's home, Llandudno Junction. County Architect's Dept., County Offices, Caernarvon.

Dublin Board of Assistance.—Replastering of west wall of mothers' wing at Pelletstown Auxiliary Institution at Ashtown. G. L. O'Connor, architect, 27, Dawson-st., Dublin.

†Folkestone T.C.—Alterations and additions to Morehall C. Schools, Chart-rd., B.E. Dep. £2 2s.

†Gateshead C.B.—Nurses' home, High Teams Institution. B.E. Dep. £5 5s.

Holywood Board of Governors of Sullivan Upper School.—New school buildings. J. S. Munce (L.), 24, Arthur-st., Belfast. Dep. £3 3s.

Hull T.C.—Painting of bridges: (1) Liverpool-st. footbridge, (2) Stepney-ln. bridge over Cottingham drain, (3) Charles-st. bridge over Cottingham drain, (4) Liddell-st. bridge over Cottingham drain, (5) sluice gates, gear, etc., at Wincolmlee on Beverley and Cottingham drain. City E. Dep. £2.

Leeds T.C.—Office and stores at Bramley depot, Leeds. J. E. Acfield, City E.

Morley T.C.—Plasterer's work in connection with 26 houses, section 1, on Hill Top housing estate, West Ardsley. B.E. Dep. £2 2s.

New Sarum T.C.—12 dwellings at West Harnham. S. R. Little, Council House, Bourne Hill, Salisbury. Dep. £5.

***New Windsor T.C.**—Extensions to Royal Free Schools. Secretary for Education, Victoria-st.

North Riding E.C.—Painting 7 schools. F. Barraclough, secretary.

***Plymouth.**—Alterations and additions to Ebenezer Church, Saltash-st. J. Leighton Fouracre (F.) and E. U. Channon (A.), Lloyds Bank-chams., Bank-st.

***Plymouth T.C.**—Public convenience at Mount Pleasant Redoubt, Stoke. City Architect. Dep. £2 2s.

Reading C.B.—Community centre on Whitley housing estate. Housing Architect. Dep. £3 3s.

Sunderland C.B.—Electrical installation at outpatients' department of Municipal Hospital. B.E. Dep. £2 2s.

Thurrock U.D.C.—1,480 yds. lin. of concrete post and chain-link fencing at Tilbury Allotments. G. F. Andrassy, E. and S. Dep. £1 1s.

JANUARY 19.

Blackpool C.B.—Alterations of old cookery room into sewing room at Tyldesley senior girls' school. Director of Education.

Bristol T.C.—Extensions to distribution centre at Cairns-rd. E. Dep. £2 2s.

Dolgelley R.D.C.—Eight non-parlour houses at Llanegryn, nr. Towyn. D. Pugh Jones, C. Dep. £2.

Hemel Hempstead T.C.—Interior decorative repairs to 38 houses, Runham-rd. B.E.

Liverpool T.C.—External painting of 6,208 houses, flats, shops, etc., on various estates. Architectural and Housing Dept., Blackburn-chams., Dale-st., Kingsway. Dep. £1 1s.

Nantwich R.D.C.—96 houses. H. Crabtree, S., 21, Pillory-st.

Nantwich R.D.C.—Wiring and installation of electricity to 60 council houses. E.

Sunderland C.B.—Centralised heating, domestic hot water supply, cold water supply, and steam supply, to the out-patients' dept. of municipal hospital. B.E. Dep. £2 2s.

Wolverhampton C.B.—120 houses at The Scotlands. B.E. Dep. £2 2s.

JANUARY 20.

Aberdeenshire C.C.—Alterations at Alford police station. M. Heddle, County Road Surveyor and Engineer, 25, Union-terr., Aberdeen.

Ealing T.C.—Conversion into flats of Horsenden Farm, Horsenden Hill. C. W. Seddon, B.E. Dep. £1 1s.

Middlesbrough C.B.—Sub-station at Thistle-st. Harry Haigh, Borough Electrical E. Dep. £1.

Norton U.D.C.—Structural alterations and additions to houses, 68 and 70, Parliament-st. T. T. Stockdale, C. Dep. £1 1s.

Portsmouth T.C.—Infants' school at Wymering. Adrien J. Sharp (L.). Dep. £3 3s.

Portsmouth T.C.—Pavilion at North End recreation ground. A. J. Sharp (L.). Dep. £1 1s.

***Portsmouth T.C.**—14 Dwellings, Mary-st. City Architect. Dep. £1 1s.

Royal West Sussex Hospital.—X-Ray Dept. Secretary, Chichester. Dep. £2 2s.

Spenborough U.D.C.—External painting at central library. J. H. Linfield, C.

JANUARY 21.

Bath T.C.—Fencing on Roundhill and Whiteway housing estates. City E. Dep. £1 1s.

Biggleswade (Beds).—16 houses at Newent, Glos., and 2 at Pauntley. F. C. Levitt (L.). Dep. £2 2s.

Brierley Hill U.D.C.—Public conveniences, Hill-st. R. H. J. Comber, S. Dep. £1 1s.

Carmarthenshire Territorial Army Association.—New headquarters, for No. 2 (A.A.) Coy., Carmarthenshire (F.) R.E., Llanelly. W. Griffiths & Son, architects, Falcon-chambs., Llanelly. Dep. £3 3s.

***Oxford T.C.**—Municipal College, Cowley-rd. Education Committee. Dep. £2 2s.

Pauntley.—10 three-bedroomed houses and 6 four-bedroomed houses at Newent, Gloucestershire, and 2 four-bedroomed houses at Pauntley, nr. Newent, for Land Settlement Association, Ltd. F. C. Levitt (L.), chartered architect, Biggleswade. Dep. £2 2s.

Shropshire E.C.—Schools at Ellesmere. A. G. Chant (A.), 5, Belmont, Shrewsbury. Dep. £2 2s.

***Tipton T.C.**—Alterations to Nos. 38-39, Owen-st. B.E. and S. Dep. £2 2s.

***Weston-super-Mare.**—69 Dwellings, Yatton. N. H. N. Darby (A.), 1, The Centre. Dep. £1 1s.

JANUARY 23.

Alexandra Park Trustees.—Conversion of Bijou Theatre into offices and flat. Secretary, Alexandra Palace, Wood Green, N.22. Dep. £2 2s.

Bangor T.C.—2 shops at Maes Geirchen housing scheme; 6 houses at central area redevelopment scheme, and 5 houses at Caernarvon-rd. B. Price Davies, City Architect. Dep. £2 2s.

***Canterbury T.C.**—Schools at Hollow-ln. Wincheap. H. Anderson & H. Campbell Ashenden (FF.), Watling-st. Dep. £4 4s.

Durham C.C.—Renewal of floors at Fence Houses council school. F. Willey (F.), 34, Old Elvet, Durham.

***East Suffolk C.C.**—Area council school at Halesworth. County Architect, Ipswich. Dep. £2 2s.

Erith T.C.—Wiring installation at new electricity offices and showrooms, Pier-rd. Electrical E.

Exmouth U.D.C.—Public conveniences at Manor grounds; public conveniences at Marine-dr.—Orcombe point; alterations and extensions to existing ladies' conveniences adjoining lifeboat station. H. S. L. Knight, E. and S. Dep. £2 2s. each.

Grimsby T.C.—Infant welfare centre and dental clinic, Hope-st. J. V. Oldfield, B.E., 170, Victoria-st. Dep. £2.

***Halifax C.B.**—Various trades in connection with George-st. redevelopment. B.E. Dep. £2 2s.

Leeds T.C.—Maintenance repairs on housing estates, etc. R. A. H. Livett (A.), Housing Director, 26, Great George-st., Leeds, 1.

London (H.M.O.W.).—Extension to Staines Head Post Office and Garage. Room 65D, Third Floor, Office of Works, S.W.1. Dep. £1.

***New Windsor T.C.**—Extensions to Clarence-rd. school. B.E., 16, Alma-rd. Dep. £2 2s.

St. Austell U.D.C.—Two engine houses at Hallaze water works. E. D. Groves, E. and S. Dep. £2 2s.

JANUARY 24.

Brentford T.C.—Conversion and adaptation for an infants' school of two rooms at Boston Manor House, Boston Manor Park, Brentford. L. A. Cooper, B.E. Dep. £2 2s.

Chesterton R.D.C.—36 houses. J. R. Oxenham, architect, The County Hall, Hobson-st., Cambridge. Dep. £2 2s.

***Lewes T.C.**—80 houses and 4 houses and shops combined, Landport estate. B.S. Dep. £2 2s.

London (H.M.O.W.).—Alterations to Sorting office, New Yard Gates, etc. at Nuneaton P.O. Telephone Exchange, Rye Telephone Exchange and Garage, Hook Telephone Repeater Station. Room 65d, third floor, Office of Works, S.W.1. Dep. £1 each.

North Cotswold R.D.C.—Improvement to existing sanitary conveniences and to provide and lay main drain in connection therewith at 6 council houses, Broad Campden. J. E. Busfield, S., Moreton-in-Marsh. Dep. £1 1s.

Northern Ireland Government.—New R.U.C. barrack at Broughshane, Co. Antrim. Secretary, Ministry of Finance (Room 128), May-st., Belfast. Dep. £1 1s.

Southampton C.C.—Extensions to Lankhills Special School, Winchester. A. L. Roberts, County Architect, Winchester. Dep. £1 1s.

Stockport C.B.—Dressing-rooms, etc., at Shaw Heath recreation ground. Wm. F. Gardner, B.S.

Ulverston U.D.C.—Interior decoration of Coronation Hall. S.

JANUARY 25.

Banstead U.D.C.—External decorations to 22 houses, Monkswell-ln., Lower Kingswood. S., Brighton-rd.

Cheltenham and Gloucester Joint Water Board.—Two valve houses in Cotswold stone, on the floor of two reservoirs at Churchdown Hill. G. Gould Marsland and C. J. Scudamore, joint engineers, 21, Eastgate-st., Gloucester. Dep. £2 2s.

***Dorchester T.C.**—24 houses in Victoria-pk. B.S. Dep. £2 2s.

Liverpool T.C.—70 flats on Blucher-st. site. T.C. Dep. £2 2s.

London (H.M.O.W.).—Gateacre (Liverpool) Telephone Exchange; Alfreton Employment Exchange (Derby). Room 65D, Third Floor, Office of Works, S.W.1. Dep. £1 each.

Sturminster R.D.C.—Reconstruction and reconditioning of three cottages, Ham-ln., Marnhull. C. W. Pike (F.), 39, High West-st., Dorchester. Dep. £1 1s.

West Riding C.C.—Police station at Todmorden. West Riding Architect, County Hall, Wakefield.

JANUARY 26.

***Abingdon R.D.C.**—16 dwellings, Steventon. A. B. West (F.), 9, Bridge-st. Dep. £2 2s.

Lambeth B.C.—Three blocks of dwellings (84 tenements), store and office, Fount-st. B.E., Brixton-hill, S.W.2. Dep £3 3s.

London (H.M.O.W.).—Alterations to Plymouth Head Post Office. Room 65D, Third Floor, Office of Works, S.W.1. Dep. £1.

***London M.W.B.**—Offices, drainage, etc., at St. John's-rd., Sidcup. Chief Engineer, 173, Rosebery-av., E.C.1. Dep. £10.

***Plymouth T.C.**—12 houses, Efford Quarry site. City Architect. Dep. £2 2s.

JANUARY 27.

Carlisle T.C.—150 houses on Belah estate, Stanwix. City E. and S., 18, Fisher-st.

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Roscommon Board of Health and Public Assistance.—Electrical wiring installation, new county hospital. Delap & Waller, consulting engineers, 16, Molesworth-st., Dublin. Dep. £5 5s.
***Stockton-on-Tees T.C.**—Maternity home, etc., at Newham Grange. B.E., Victoria-bldgs. Dep. £2 2s.

JANUARY 28.

Calne and Chippenham R.D.C.—5 houses at Hilmarton, 6 at Kington St. Michael, and 3 at Lacock. G. Parker Pearson, M.Inst.C.E., F.S.I., Dallas-chams. Dep. £3 3s.
***Maidstone T.C.**—New Baths, Square Hill-rd. B.S. Dep. £5 5s.
***Surrey C.C.**—Contractors who wish to tender for adaptation and erection of farm buildings; erection of new cottages, and erection of new school buildings and alterations and additions to existing buildings. Dudley Aukland, C., County Hall, Kingston.
Walton and Weybridge U.D.C.—Garages, workshop, messroom, etc., at refuse destructor works. E. A. Lister, A.E. and S.

JANUARY 30.

***Birmingham T.C.**—Cleansing Stations at various A.R.P. Depots. E. and S. Dep. £2 2s.
Kendal T.C.—324 houses at Sandlands. B.S. Dep. £2.
***London (H.M.O.W.).**—South Stoke (Lincs) Telephone Repeater Station; extension to Stockfield (Newcastle-on-Tyne) Telephone Exchange and alterations to Forest Gate Branch Post Office, 14-16, Woodgrange-rd. Room 71, Ground Floor, Office of Works, S.W.1. Dep. £1 each.
Portsmouth T.C.—Repairs to reinforced concrete columns, beams, tank, etc., of Stamshaw salt water tower. City E. Dep. £1 1s.
West Riding C.C.—Repairing and rebuilding dry rubble walls, roadmaking and fencing site of proposed senior school at Bradfield and installation of hot water heating apparatus in extensions at Hatfield Woodhouse council school. Education Officer, Wakefield.

JANUARY 31.

Aldershot T.C.—Manor Park Schools. T.C. Dep. £5 5s.
Bedfordshire C.C.—Extensions to St. Peter's hospital, consisting of new wards, new maternity unit, and additions to nurses' home. County Architectural Dept., Bedford. Dep. £3 3s
Chester T.C.—Demolition of 97 houses on Princess-st. clearance area. C. Greenwood, City E. and S. Dep. £1 1s.
Holland (Lincs) C.C.—Gleed senior school, Halmergate. Director of Education, Spalding.
***London (H.M.O.W.).**—Dagenham Docks Branch Post Office. Room 71, Ground Floor, Office of Works, S.W.1. Dep. £1.

FEBRUARY 1.

Brighton C.B.—Timber Pavilion on Brapool sports ground in London-rd. B.E. and S. Dep. £2 2s.
***London (H.M.O.W.).**—Sandwich Post Office; Tring Telephone Exchange; Thornton-in-Lonsdale Telephone Repeater Station and Internal Painting and Cleaning at Birmingham Post Office Stores, Fordrough-ln. Room 71, Ground Floor, Office of Works, S.W.1. Dep. £1 each.
Pembroke T.C.—Public convenience in Lower Meyrick-st., Pembroke Dock. B.S. Dep. £1.
Southend-on-Sea C.B.—2,014 yds. lin. galvanised chain link fencing. R. G. Baxter, B.E. and S. Dep. £1.

FEBRUARY 3.

Aberystwyth T.C.—80 houses, Maesheli housing scheme. Llewelyn Jones, B.S., Park-av. Dep. £3 3s.
***Middlesbrough Diocesan Trustees.**—Senior Roman Catholic school, South Bank, Eston. T. Crawford (L.), 82, Borough-rd.
***North Riding E.C.**—School at Newby, nr. Scarborough. F. X. Velarde (F.), 3, Abercromby-sq., Liverpool.

FEBRUARY 6.

***Brecon C.C.**—Isolation hospital. T.C. Dep. £2 2s.
Ennis.—Electrical installation at County Clare mental hospital, Ennis. N. Mathews, E., 104, Grafton-st., Dublin, or Sheahan & Clery, architects, 47, O'Connell-st., Limerick. Dep. £5 5s.
***Wembley T.C.**—Maternity and Child Welfare Clinic in College-rd. T.C. Dep. £2 2s.

FEBRUARY 7.

Barnsley C.B.—58 houses on Burton-ln. housing scheme, Monk Bretton. B.E. Dep. £1 1s.
Norfolk C.C.—House, cycle shed, store and potting shed, at Central Isolation Hospital, East Dereham. County Architect, 25, Thorpe-rd., Norwich.

FEBRUARY 8.

Fylde Water Board.—Pump house at Westby reservoir, nr. Kirkham. E., Sefton-st., Blackpool.
Sunderland.—New joiners' shop and paint shop at Cherry Knowle Hospital, Ryhope (formerly Ryhope Mental Hospital). Wm. & T. R. Milburn (FF.), 17, Fawcett-st. Dep. £2 2s.

FEBRUARY 9.

***Manchester T.C.**—18 houses at Parkside-rd., Wilbraham-rd. estate, Fallowfield. Housing Dept. Dep. £2 2s.
***Southgate B.C.**—Pair of gardeners' cottages at isolation hospital, Tottenhall-rd., N.13. B.E. and S., Palmers Green. Dep. £2.

FEBRUARY 11.

***Durham C.C.**—Rebuilding Holywood Hall Sanatorium, Wolsingham. C.E., 20, Old Elvet. Dep. £3 3s.
Faringdon R.D.C.—13 non-parlour houses. K. M. Hart, S. Dep. £2 2s.

FEBRUARY 13.

***Stockport C.B.**—Demolition of old and erection of female mental wards, Shaw Heath institution. Pierce & Son, 30, St. Petersgate. Dep. £2 2s.

FEBRUARY 15.

Atherstone P.C.—Swimming pool and other works. John H. Haiste, chartered civil engineer, Middleton-chambs., Lowgate, Hull. Dep. £2 2s.

FEBRUARY 16.

Essex C.C.—Convalescent hospital, Pyrgo-pk., Romford. C., Chelmsford. Dep. £10 10s.

NO DATE.

Hull Royal Infirmary.—Nurses' recreation hall, Prospect-st. Gelder & Kitchen, architects, 120, Alfred Gelder-st. Dep. £2 2s.
Mansfield T.C.—Works in connection with proposed extensions to Infectious Diseases Hospital. W. Thompson, B.E. and S.
Queensbury and Shelf U.D.C.—20 bungalows at Cheapside, Shelf. G. R. Oddy, architect, Ward's End-chams., Halifax.
St. Austell.—House and garage, Tregonissey-rd., St. Austell, for A. R. Trudgian, Ranelagh-rd.
Swansea.—Premises for Baptist Union of Wales and Monmouthshire, Mansel-st. E. Emrys Edmunds (A.), 93, Mansel-st. Dep. £2 2s.
York T.C.—Painting of sub-station buildings in York and outlying villages. City Electrical Engineer, Electricity Offices, Clifford-st.

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Barnstaple R.D.C.—R. J. Ayers, District S., Castle-st.
Barnstaple T.C.—B.S.
Cambridgeshire C.C.—C.S., Cambridge.
Devon C.C.—C., Exeter.
Newton Abbot R.D.C.—Highway Surveyor's Department.
Plympton St. Mary R.D.C.—P. T. Loosemoor, C.
St. Thomas R.D.C.—J. G. P. Madge, S.
Wandsworth B.C.—T.C.
Wanstead and Woodford T.C.—A. D. Ward, B. E. and S.
Weymouth and Melcombe Regis T.C.—B.E. and S.

JANUARY 19.

Bideford T.C.—B.S.
Southport C.B.—H. L. Bunting, B.E. and S.

JANUARY 20.

Dagenham T.C.—F. C. Lloyd, B.E. and S.
Epping U.D.C.—H. J. Mead, S., 91, High-st.
Exmouth U.D.C.—H. S. L. Knight, S.
Gainsborough R.D.C.—E. Donelly, S., 17, Morley-st.
Hornsey T.C.—J. H. Melville Richards, B.E. and S.
Kingston T.C.—B.S.
Lincoln (Lindsey) C.C.—A. G. Bradshaw, C.S., Lincoln.
Newport C.B.—400 yds. of 12-inch cast-iron pipes, E., Water Dept., High-st.
Tonbridge R.D.C.—W. N. Miller, E. and S.

JANUARY 21.

Beddington and Wallington T.C.—S. F. R. Carter, B.E. and S.
Blackburn C.B.—B. and Water E.
Canterbury T.C.—H. M. Enderby, City E.
Cheltenham T.C.—G. G. Marsland, B. and Water E.
Newport (I. of W.)—C.C.—P. E. White, C., Newport.
Stockport C.B.—Wm. F. Gardner, B.S.
West Riding C.C.—C.S., Wakefield.

JANUARY 23.

Banstead U.D.C.—S.
Belfast C.B.—City S.

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FEBRUARY 4.

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FEBRUARY 18.

***Shropshire E.C.**—School furniture. Secretary, Shrewsbury.

NO DATE.

***Slough.**—Various materials for 253 houses at Slough. Percy Bilton, Ltd., 113, Park-st., W.1.

ENGINEERING, IRON AND STEEL.

JANUARY 18.

Burton-upon-Trent C.B.—Duplication of rising main, sewage pumping station. B.E. and S.
Merton and Morden U.D.C.—Cleaning out of lake on Cannon Hill Common. R. W. North, E. and S. Dep. £1.

JANUARY 19.

Birkenhead C.B.—Widening and improvement of Saughall Massie-rd., Upton, from Saughall Massie Bridge to Devonshire-rds. B.E. and S. Dep. £2 2s.

JANUARY 20.

Dumfries T.C.—Sewage purification works near Lincluden Abbey. B.S. Dep. £2 2s.

JANUARY 23.

Flaxton R.D.C.—Sewerage scheme extensions at Skelton, Haxby and Huntington, near York. Fairbank & Son, consulting engineers Barclays Bank-chams., St. Helen's-sq., York.

JANUARY 24.

Leeds T.C.—Reinforced concrete arch bridge over Pudsey Beck on Leeds-Pudsey boundary at Roker-ln. J. E. Acfield, City E.

North Cotswold R.D.C.—Extension of Chipping Campden sewage scheme to Back Ends, Chipping Campden. J. E. Busfield, S. Dep. £2 2s.

JANUARY 26.

Fermanagh C.C.—Two concrete girder river bridges. J. P. Burkitt, C.S., Enniskillen. Dep. £3 3s.

Fifeshire C.C.—Providing, laying and jointing about 12 miles of 18 in. dia. cast-iron or steel water main, with necessary valves, etc., from Yetts of Muckhart (cross roads on Dollar to Milnathort and Dunfermline to Crieff roads) to Navitie. H. F. Hodge, C.E., 34, Viewfield-ter., Dunfermline. Dep. £2 2s.

Manchester T.C.—Reserve water tank and pipework at Barton Power Station. H. C. Lamb, E., Electricity Dept. Dep. £1 1s.

JANUARY 27.

Glascoed (H.M.O.W.).—Pumping plant and pipe work at Glascoed R.O.F. Room 64D, Third Floor, H.M.O.W., S.W.1. Dep. £1.

JANUARY 30.

Forehoe and Henstead R.D.C.—For Portingland water supply scheme. Elliott & Brown, consulting engineers, Burton-bldgs., Parliament-st., Nottingham Dep. £3 3s.

Glasgow T.C.—Footbridge over Forth and Clyde Canal at Maryhill. J. L. Mackenzie, T.C.

JANUARY 31.

Feltham U.D.C.—For Northern area sewerage. D. Balfour & Sons, consulting engineers, 47, Victoria-st., S.W.1. Dep. £5.

Sunbury-on-Thames (M.W.B.).—Construction of a 9-ft. dia. steel-lined reinforced concrete conduit and a 60-in. dia. steel conduit, together with contingent works. Chief Engineer's Department (Room 201), 173, Rosebery-av., E.C.1. Dep. £10.

Wilts C.C.—Reconstruction of Hancock's water bridge, Wootton Bassett-Marlborough-rd. H. S. Ganderton, C.S., Trowbridge. Dep. £2.

FEBRUARY 6.

Bognor Regis U.D.C.—Stepped concrete apron with supporting works to sea wall, approximately 280 ft. long, between groynes 30 and 32. E. and S. Dep. £2 2s.

Peterborough T.C.—Sewage purification works. J. D. & D. M. Watson, engineers, 3, Central-bldgs., Westminster, S.W.1. Dep. £5 5s.

Rugby R.D.C.—Supply, delivery, laying and jointing of approx. 14 miles of asbestos-cement pressure pipes and 5 miles of spun-iron pipes, of sizes varying between 12 in. and 3 in. dia. J. D. & D. M. Watson, engineers, 3, Central-bldgs., Westminster, S.W.1. Dep. £3 3s.

FEBRUARY 7.

Cheshire C.C.—Construction of Walton Diversion, approximately 800 yds. in length, together with widening of existing road for length of approximately three-quarters of mile to south. G. E. Ashforth, County Surveyor and Bridgemaster, Chester. Dep. £5 5s.

FEBRUARY 14.

Colne Valley Sewerage Board.—1¾ miles of 75-in. dia. sewer in steel and concrete pipes and c.i. segments, and about 1 mile of 15-in. dia. sewer in iron and concrete pipes, together with manholes, river, canal and railway crossings and other appurtenant works. Sandford Fawcett & Partners, consulting engineers, 53, Victoria-st., Westminster. Dep. £10 10s.

FEBRUARY 15.

Egyptian Government.—Supply and erection of water pipe lines for Fayoum water works installation. Chief Inspecting Engineer, Egyptian Government, 41, Tothill-st., London, S.W.1.

MARCH 14.

Australia (State Electricity Commission of Victoria).—Boiler house plant and steel buildings for Newport "C" Power Station, including water tube boilers, pipework, coal and ash handling plants and steel chimneys, boiler house and tank house buildings. Dept. of Overseas Trade, S.W.1.

MARCH 31.

Ceylon Government.—Gravity type dam, tunnel, power house building, etc.; two pipe lines; three waterwheel generator sets; 66 kv. duplicate transmission lines for hydro-electric scheme. Preece, Cardew & Rider, engineers, 8 and 10, Queen Anne's-gate, Westminster, S.W.1. Dep. £10 each section.

ROAD, SEWERAGE AND WATER WORKS.

JANUARY 18.

Arbroath T.C.—Road and sewer work, Noran-av. housing scheme, second development. B.E. Dep. £1.

Border R.D.C.—750 lin. yds. of 3-in. dia. water pipes. E., 17, Victoria-pl., Carlisle.

Hull T.C.—Reconstruction of back road at rear of 96 to 164, Westfield-rd., and 79 to 139, Pickering-rd. (approximately 670 sq. yds. of concrete paving). City E. Dep. £2.

South Shields C.B.—Roadworks in Grosvenor-rd. and Sheldon-rd. John Reid, B.E. Dep. £2 2s.

Surbiton T.C.—Making-up footway and grass verge approx. 60 yds. in length, together with appurtenant work in Raeburn-av. B.E. and S.

JANUARY 19.

Cardiff T.C.—Various private street works. City E.

Exmouth U.D.C.—Asphalting Rolle-st. H. S. L. Knight, E. and S. Dep. £2 2s.

Middlesex C.C.—Barnet by-pass—widening between Finchley-ln. and Pope-st.; Great West-rd. extension into London—Duke-av. to Cambridge-rd.; Western-av.—widening of carriageway and construction of cycle tracks between Great Western Railway, Greenford, and Oldfield-ln. C. W. Radcliffe. C. Dep. £19 19s.

Seaford U.D.C.—Making-up of Connaught-rd. and Queen's Park-gdns. E. Sykes, S. Dep £2 2s.

Sunderland C.B.—Reconstruction of Roker-ter. sewer. B.E. Dep. £5 5s.

JANUARY 20.

Edinburgh T.C.—Surfacing of various carriageways and footways. City E.

Lancaster T.C.—15-in. main crossing River Lune. Frederick Hill, City Water E. Dep. £1 1s.

Morecambe and Heysham T.C.—220 lin. yds. of stoneware pipe sewers on land adjacent to the Winter Gardens Theatre. A. H. S. Waters, 25, Temple-row, Birmingham, 2.

JANUARY 21.

Aysgarth R.D.C.—2,100 yds. of 2 in. Everite asbestos-cement pressure pipe, 792 yds. of 2 in. and 132 yds. of 1 in. galvanised iron pipe, with valves, collecting chamber, etc., in connection with the water supply for Carperby. J. J. Willan. Dep. £1 1s.

Banstead U.D.C.—Making-up, sewering and surface-water drainage in Castleton-dr. and Greenhayes-av. (part). S. Dep. £1.

Eccles T.C.—Surfacing of King-st. with granited rock asphalt. B.E. and S.

Hertfordshire C.C.—Surface spraying county roads with hot tar or hot bituminous compounds. A. Ernest Prescott, C.S.

Kirbymoorside R.D.C.—833 yds. of spun-iron mains at Low Mills, Farndale West. T. Russell, S., Market-pl.

Manchester T.C.—Sewering, draining, kerbing and paving new roads on north-west side of Sharston-rd., Northenden, and Northen Etchells, on eastern industrial area, Wythenshawe. City E. Dep. £2 2s.

Manchester T.C.—Sewering and draining factory-ln., Harpurhey, from Somerfield-rd. to a point approximately 250 yds. south-east. Highways Dept. (District Surveyors' Office), Town Hall. Dep. £1 1s.

Romford T.C.—Road on Brooklands housing estate. B.E. and S.

Seaton U.D.C.—Reconstruction of 700 lin. yds. of concrete tube and stoneware sewers. D. R. Price, S. Dep. £2 2s.

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Wrexham T.C.—Reconstruction and improvement of Stansty-rd. B.E. Dep. £2 2s.

JANUARY 23.

Beddington and Wallington T.C.—Reconstruction of Woodmansterne-ln. R. F. R. Carter, B.E. and S.

Belfast T.C.—Widening and resurfacing with tarmacadam, together with provision of a new surface-water drainage system, etc., in Ballysillan Park, at property of the North of Ireland Real Estate Co. City Surveyor (Room 84), City Hall.

Belfast T.C.—Sewering, paving, etc., of new streets. City Surveyor (Room 37), City Hall. Dep. £1 1s.

Bognor Regis U.D.C.—Resurfacing Hawthorn-rd. and Victoria-dr. E. and S. Dep. £5 5s.

Chelmsford T.C.—Making-up Moulsham-dr., Oaklands-cres., St. John's-av., St. Vincent's-rd., St. Mildred's-rd. Vincent J. Willis, B.E. and S. Dep. £3 3s.

Crayford U.D.C.—450 lin. yds. of steel, reinforced concrete or other linings for permanent lining of air raid trenches. F. A. N. Turner, E. and S. Dep. £1 1s.

Durham T.C.—Reconstruction of Milburngate and Framwellgate-rd. John W. Green, City E. and Architect. Dep. £2 2s.

Edmonton T.C.—10,500 sq. yds. of reinforcement to their Hoe-ln. housing scheme at Enfield, and 25,200 sq. yds. of reinforcement for Light Railway-rd. E. J. Willis, B.E. and S.

Enfield U.D.C.—Making-up of Lancaster-av. (part of) and Clarence-rd. (part of). Frank Lee, E. and S., 7, Little Park-gdns. Dep. £2.

Essex C.C.—Making-up tarmacadam of St. John's-av., Harlow. R. H. Buckley, C.S., Chelmsford. Dep. £1 1s.

Essex C.C.—Footways, carriageway and kerbing in Riverside-av., Nazeing. R. H. Buckley, C.S., Chelmsford. Dep. £1 1s.

Godalming T.C.—Water main at Munstead-pk., Godalming. E. G. Bowyer, Waterworks E., 35, Bridge-st. Dep. £1 1s.

Ilford T.C.—Making-up Stapleford-av. and Sydney-rd. B.E. and S. Dep. £2 2s.

Ilford T.C.—Concreting of 1,350 yds. of trenches, already excavated and timbered. L. E. J. Reynolds, B.E. Dep. £2 2s.

Newcastle-under-Lyme T.C.—Roads and sewers, etc., off Bradwell-ln. J. Griffith, T.C. Dep. £1 1s.

Romford T.C.—Foul and surface-water sewers in Highfield-rd. B.E. and S. Dep. £3 3s.

Salford T.C.—260 yds. of concrete pipe sewer in Ordsall-ln. City E. Dep. £2 2s.

Uttoxeter U.D.C.—Widening and making-up of 600 yds. of a 40-ft. road. S. Dep. £2 2s.

JANUARY 24.

Brentford and Chiswick T.C.—Precast reinforced concrete revetments to trenches in open spaces. L. A. Cooper, B.E. and S. Dep. £5 5s.

Conway T.C.—Extension of water mains. B.E.

Hazel Grove and Bramhall U.D.C.—Making-up of Queensgate, Bramhall; Mayfield-rd., Bramhall; Woodland-av., Hazel Grove. S. Dep. £2.

JANUARY 25.

Derbyshire C.C.—Construction of Borrowash by-pass, Derby-Nottingham-rd. C. G. Millican, C.S., St. Mary's-gate, Derby. Dep. £5.

Essex C.C.—Steel mesh reinforcement in connection with London-Yarmouth trunk road, at Kelvedon to Marks Tey. Robt. H. Buckley, C.S., Chelmsford. Dep. £1 1s.

Essex C.C.—Steel mesh reinforcement in connection with London-Yarmouth trunk road, at Margaretting to Widford. Robt. H. Buckley, C.S., Chelmsford. Dep. £1 1s.

Hebburn U.D.C.—Making-up of portion of Lambley-cres. E. G. Lediard, S. Dep. £1 1s.

Sturminster R.D.C.—Drainage works on council's housing sites at Okeford Fitzpane, King Stag, and Childe Okeford, involving laying of about 360 yds. of drains, construction of manholes and two small septic tanks and filters, etc. A. J. Allen, E., Half Moon-st., Sherborne.

JANUARY 26.

Cardiff R.D.C.—Various private street works. W. Farrow, E. and S., 20, Park-pl.

JANUARY 27.

Breconshire C.C.—Reconstruction of section of Brecon-Merthyr-rd. at Llwyn-on. J. M. Richards, C.S., Watton, Brecon. Dep. £10.

Taunton R.D.C.—Water mains in parishes of Ash Priors and Halse. Sidney S. Orchard, S.

JANUARY 30.

Dartford T.C.—Street works in Lingfield-av. and Fairway-dr. B.S. Dep. £2 2s.

Middlesex C.C.—Reconstruction and widening between Lady Margaret-rd. and Green-dr., Southall. C.E., 10, Great George-st., S.W.1. Dep. £5 5s.

Nuneaton T.C.—Making-up of Bermuda-rd. R. C. Moon, B.S. Dep. £2 2s.

JANUARY 31.

Luton T.C.—Reconstruction of part of Upper George-st. J. W. Tomlinson, B.E. and S. Dep. £2 2s.

FEBRUARY 3.

Yeovil T.C.—1,000 lin. yds. of 12 in. and 140 lin. yds. of 6 in. cast-iron water mains. A. J. Price, Water E.

FEBRUARY 7.

***Crewe T.C.**—Street works (back passages). B.E. and S. Dep. £2 2s.

FEBRUARY 11.

Durham C.C.—Making-up North-st. back, New Silksworth, Tunstall. Wm. J. Merrett, C.E. and S., 43, Old Elvet, Durham.

Northern Ireland Government.—Road underpass at Tillysburn, nr. Belfast. Ulster Agent in Great Britain, 21, Cockspur-st., London, S.W.1. Dep. £10.

Public Appointments.

JANUARY 16.

Rochdale C.C. — Architectural Draughtsman (Temp.). B.S. and Architect.

JANUARY 17.

Skipton U.D.C.—Architectural Assistant. E. and S.

JANUARY 18.

***Breconshire C.C.**—Two Junior Architectural Assistants (Temp.). C.

Lambeth B.C.—Sewers Foreman. T.C., Brixton Hill, S.W.2.

St. Marylebone B.C.—Architectural Assistant (Temp.). T.C.

Scunthorpe T.C.—Architectural Assistant (Temp.). T.C.

JANUARY 19.

***Brandon and Byshottles U.D.C.**—Clerk of Works. C., 5, North Bailey, Durham.

***Derbyshire C.C.**—Architectural Assistant. County Architect, St. Mary's-gate.

JANUARY 20.

Bolton C.B.—Quantity Surveyor. T.C.

JANUARY 21.

Cornwall C.C.—Architectural Assistant. C., Truro.

***Peterborough T.C.**—Architectural Assistant. T.C.

Port of London Authority.—Third Professional Assistant. Establishment Officer, Trinity-sq., E.C.3.

JANUARY 23.

***Surrey C.C.**—Architectural Assistant (Temp.). C.E., Kingston-on-Thames.

Willesden T.C.—Technical Assistants (Temp.). T.C., Dyne-rd., N.W.6.

JANUARY 24.

***Ilford T.C.**—Architectural Assistant (Temp.). T.C.

***Slough T.C.**—Gas Fitter. T.C.

JANUARY 25.

***Bermondsey B.C.**—Surveying Assistant (Temp.). General Manager, Spa-rd., S.E.16.

***Great Yarmouth C.B.**—Architectural Assistant. T.C.

***South Shields C.B.**—Architectural Assistant. T.C.

JANUARY 26.

***Glamorgan C.C.**—Assistant Engineer and Drainsman. Medical Superintendent of Hensel Castle, Pontyclun, Glam.

JANUARY 27.

***Gloucester C.C.**—Junior Architectural Assistant. T.C.

Southampton C.B.—Three Architectural Assistants (Two Temp.). B.E. and S.

FEBRUARY 3.

***Southend-on-Sea C.B.**—Landscape Draughtsman. Parks Superintendent, Burdett-rd.

NO DATE.

***Chatham.**—Clerk of Works. D.C.R.E., Inner Lines.

Chilwell (Notts).—Clerk of Works (Temp.). C.R.E. Chilwell Area, Central Ordnance Depot.

***London.**—Architectural and Engineering Assistants. Under-Secretary of State, Air Ministry, Adastral House, W.C.2.

CURRENT AND PROPOSED BUILDING WORK*

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Where business representatives cannot be seen personally at this stage, this should be mentioned. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Barnsley.—Vernon Dunk, Ltd., 43, Granville-st., to erect 22 houses, Queen's-dr. Architect, F. Birkinshaw, Pogmoor, nr. Barnsley.

Battersea.—B.C. considered application from L.C.C. inviting suggestions upon application by Sir John Burnet, Tait & Lorne, architects, for sanction to formation or laying out of new street and extension and widening of existing streets, in connection with development of the Hibbert-st. area.—Plans passed: Clemens Bros., Ltd., 147-149, Battersea Church-rd., and conversion of 151.

Beddington and Wallington.—T.C. approved: United Dairies, Ltd., 34, Palace-ct., London, W.2, alterations to 117, Manor-rd.; Hackbridge Cable Co., Ltd., 190, London-rd., additions to premises.

Bermondsey.—B.C. recommend new lavatory accommodation in Sard Rent area at £316.—Drainage plans passed: W. E. Baker, General Manager, Town Hall, Block 1, Neckinger; W. Figg, 67, George-row, for B. Young & Co., Ltd., Dunlop-pl., new chrome building, Glue factory, Dunlop-pl.

Bexhill.—Provided that licence to race is obtained, a £30,000 greyhound racing stadium will be built between Hastings and Bexhill. G. H. Boswell-Preston is managing director of company. Site is Glynne Farm estate, midway between Bexhill and St. Leonards.

Birmingham.—Airport Committee of T.C. recommends that hangar with ancillary accommodation be erected, at £60,000, at Elmdon and leased to Air Ministry for training of Royal Air Force Volunteer Reserve.

Birmingham.—Plans completed by Roland Satchwell, of Birmingham, and approved by promoters, for £500,000 sports stadium at Shirley.

Birmingham.—Governors of Queen's College, Paradise-st., propose chapel at £4,500. W. Holland Hobbiss (F.), 55, Newhall-st., architect.

Bootle.—Governors of St. Joan's Schools propose senior school at Rimrose-rd. Anthony Ellis (L.), architect, The Temple, Dale-st., Liverpool. Quantity surveyor, E. H. Garner, The Temple, Dale-st., Liverpool, 2.

Bradford.—Plans for proposed Fairweather Green senior school been prepared by City Architect, J. A. Fletcher. Estimated cost £63,300.

Brighton.—Board of Management of Royal Sussex County Hospital approved plans prepared by Hospital's architect, J. L. Denman (F.), for improvement of sanitary and domestic accommodation in John Howard Wards.

Cardiff.—Tenders to be invited shortly for extensions, including new maternity department and nurses' hostel at Cardiff Royal Infirmary. Architects, Elcock & Sutcliffe (FF.), Adam House, Strand, London, W.C.2.

Cheltenham.—T.C. approved: Melville & Webber, 20 blocks of maisonettes, off Brooklyn-rd.; Pye Bros., 56 semi-detached houses and 2 detached houses, off Brooklyn-rd.

Coventry.—Bishop of Coventry's Appeal Fund propose church halls at St. Mary's Magdalen and Church of St. James, Fletchampstead, at £5,000. Architect, N. F. Cachemaille-Day (F.), 25, Dorset-st., London, W.1.

Coventry.—T.C. approved: 17 houses, Frankpledge-rd., and 19 houses, Court Leet-rd., Merrett & Co.; 20 houses, Sullivan-rd., L. Parsons; 27 houses, Silksby-st., Lewis Estates, Ltd.; 2 houses, Abbey-rd., and 33 houses, Ashington-gr., James & Edwards; 43 houses, Harewood-rd., Spring & Phillips; 53 houses, Over-st., and 24 houses, Tallants-rd., Bayliss Bros.; 23 houses, Glendower-av., Wates, Ltd.; 59 houses, Sullivan-rd., W. R. Lane & Son; 10 houses, Nunts-ln., 21 houses, Nunts Park-av., 9 houses, Meadow-rd., T. Dalton & Co.; additions to Foxford schools, Hurst-rd., Corporation; bank premises, corner of Tile Hill-ln. and Fletchamstead-highway, Barclays Bank, Ltd.; lock-up shop, offices and garage, Well-st., J. H. & R. E. Gilbert; 26 houses, Wyken Croft, 22, houses, Wyken-av., 16 houses, Sewall-highway, and 20 houses, Dartmouth-rd., E. K. Youell & Son, Ltd.; 36 houses, Dartmouth-rd., Rosamund Bros.; 21 houses, Sullivan-rd., Lucas Bros.; 12 houses, Tonbridge-rd., and 20 houses, London-rd., F. A. Sutton; 24 houses, St. Ives-rd., Bratby & Sons; 4 houses with shops and 2 lock-up shops, corner of Kelmscote-rd. and Brandfield-rd., Cooksey Estates, Ltd.; 22 houses, Kingsbury-rd., Scarborough Estates, Ltd.; shops and offices, Broadgate and Trinity-churchyard, Prudential Assurance Co., Ltd.; 12 flats and 7 garages, Grosvenor-rd., Greyfriars Estates, Ltd.; rebuilding premises, corner of King William-st. and Wellington-st., F. Welton; additions to factory, Fletchamstead-highway, Coventry Gauge & Tool Co., Ltd.; 20 houses, Macdonald-rd., P. McMinamin; 3 houses, Kempley-av., 27 houses, Momus-boulevard, 9 houses, Briars-cl., 5 houses, Bromleigh-dr., 5 houses, Momus-boulevard, and 4 houses, Anthony-way, A. E. White; 24 houses, Owenford-rd., A. Jervis.

Dagenham.—B.S. prepared plans showing proposals for building on vacant land in Rainham-rd., situate between Salvage Plant and Parks Superintendent's house, and facing Fire Station, in connection with A.R.P. work, at £11,000.—Plans passed: Romford Stadium, Ltd., 2 blocks of lavatories and entrance offices and turnstiles at Dagenham Stadium, Ripple-rd.; Charrington & Co., Ltd., sports pavilion and groundsman's living quarters; Union Cable Co., Ltd., workshops and timber store, Chequers-ln., Mr. Smith, 7 lock-up garages, rear of Crown garage, Rainham-rd.; Romford Flying Club, aerodrome hangar, Forest-rd.

Denham.—Harman's Uxbridge Brewery Co., Ltd., propose to rebuild the "Gravel Diggers' Arms" p.h., Uxbridge-rd., at £10,000. Architect is G. Langley Taylor (F.), Beaconsfield.

Droitwich.—T.C. approved plans:—Extensions to St. John's Hospital, for Building Committee. Architect, J. E. Seabright (A.), Estate Offices, Corbett-av.

Droylsden.—Plans approved: Premises, Sunny Side-rd., Droylsden Industrial Co-operative Society, Ltd.; works premises, Manor-rd. and Davenport-st., Yates & Howard; houses, Greenside estate (Sunny Side-rd.), W. Chappell & Sons, Ltd.

East Ham.—B.E. submitted plan and alternative estimates for pavilion for use by bowling clubs in Gooseley's Playing Fields. Estimated cost of £200.—M.H. given formal consent to borrowing of £11,761 in respect of engineering services at Harts Sanatorium.

Essex.—C.C. recommend inviting tenders for increasing accommodation for infirm women by 19 beds and provision of up-to-date sanitary facilities in connection therewith at St. John's Hospital, Chelmsford, at £732.—Sketch plans for enlargement of Manningtree Council senior school, to bring the accommodation up to 480-560, including caretaker's house, £8,204, recommended.—Sketch plans for wooden building, at £800 for buildings, for use as dining-hall, kitchen, etc., at Dunton Council junior school, approved.—Sketch plans submitted by promoters for erection of Horkesley proposed C.E. senior school, to provide accommodation for 240 pupils been approved. Cost, £13,750.

Formby (Lancs).—R.C. Authorities propose Catholic school, Three Tuns-ln. and School-ln. A. Gilbertson, architect, 15, Tithebarn-st., Liverpool.

Fulham.—B.C. approved scheme of reconstruction of sewers in Borough at £40,000.

Gateshead.—T.C. approved: W. Leech, 25 garages to houses, Hill Crest estate, Lobley Hill; North-Eastern Trading Estates, Ltd., factory (N.74) at corner of Seventh-av. and Queensway, Team Valley Trading Estate; Thompson Bros., warehouse, rear of Red Stamp House; Jas. Deucharr, Ltd. (amended), reconstruction of the "New Cannon Inn," corner of Durham-rd. and Beaconsfield-rd., Low Fell.

Halifax.—E.C. recommend that plans submitted for proposed extension of Technical College, at £148,000, be approved, and submitted to B. of E. for approval.

Hebburn-on-Tyne.—U.D.C. approved plans for 22 blocks of semi-detached houses on Victoria-rd. estate, for Carr-Ellison Estates, Ltd., Collingwood-st., Newcastle-on-Tyne. Plans by Capt. C. McGhie, estate architect.

Hendon.—T.C. resolved to press for approval of Middlesex C.C. to provision of 3 multi-purpose buildings and when principle been agreed, plans and estimates be submitted for consideration in connection with A.R.P. work.

Huddersfield.—Bentley & Shaw, Ltd., Lockwood Brewery, propose hotel, Brackenhall housing estate. Architects, Abbey & Hanson, 11, Cloth Hall-st.

Kensington.—B.E. prepared scheme for adaptation for office purposes of part of covered way in Town Hall, at £150. Tenders to be invited.—Plans passed: "Brew House," 127-131, Old Brompton-rd., lock-up shops; 26-30, Chepstow-cres., block of flats; 12 and 13, Queen's Gate-gdns., conversion into maisonette and flats; 185-223, Portland-rd., and 1-19, Heathfield-st., block of flats.

Kettering.—Plans approved and tenders being asked for new R.C. Church on London-rd. Architect, E. Bower Norris (F.), of Sandy & Norris, 134, Newport-rd., Stafford.

Kingston.—T.C. approved: Tudor-dr, 18 maisonettes in two blocks; Rayleigh-cl., 38 maisonettes; 5 and 7, Kingston-hill, offices and stores; Richmond-rd., 8 shops with 12 flats over.

Laindon.—Extensive improvements to station on Southend and Tilbury line announced by L.M.S. Rly. Cost, £14,620.

Letchworth.—Roman Catholic Diocese approved church in Broadway and Pixmore-way. Architects, Nicholas & Dixon-Spain (FF.), 19, Hanover-sq., W.1. No contracts let.

Leyton.—E.C. recommend installation of central heating apparatus at Cann Hall-rd. junior boys' and infants' school, at £2,000, and £1,050 to be included in estimate for 1939-40 for modernising of latrines at Farmer-rd. junior boys' and infants' and Mayville-rd. junior girls' and infants' schools.

Lincoln.—City Council approved proposal by Housing Committee to redevelop slum-cleared Newport area by erection 33 houses, at £17,252.—Similar proposals for building 10 houses in slum-cleared Mill-row and Mill-court districts, at £4,254, accepted by Council.

Liverpool.—Plans passed by Corporation:—Junior and infants' council school, Long-ln., Corporation; factory buildings, Edwards-ln., Corporation; 9 houses, Darsfield-rd., 8 houses, Colmdale-rd. and house, North Barcombe-rd., Medcalf & Medcalf, for Ind. Coope & Allsopp, Ltd.; large garage and office building, Lancelot's Hey, Union-st. and Fazakerley-st., H. E. Davies, for British Viscoleum Fuels, Ltd.; infants' school, Pinehurst-rd., Corporation; 19 houses, Walsingham-rd., and house, Manvers-rd., Richard Owens & Son, for Jones & Williams; large new office building, Exchange-bldg., Gunton & Gunton, for Liverpool Exchange Co., Ltd.; extension of factory, Bull-ln., Redpath, Brown & Co., Ltd., for Reads, Ltd.; factory building, Regent-rd., F. H. Porter, Ltd., for Selves; office building, Prescot-rd., Cruikshank & Seward, for Britannic Assurance Co., Ltd.; Air Ministry building, Dryden-rd., Dudley Nesbit, for Automatic Telephone and Electric Co., Ltd.; 7 houses, Birchfield-rd., 10 housse, off same, and 3 houses, Edge-gr., Gray, Evans & Crossley, for Benber Estate, Ltd.; 10 houses, Muirhead-av. East, 36 houses, Meadow-ln., and 8 houses, Meadow-way, R. G. Tyrer, for Scarratt Bros.; office and showroom at garage, Dunbabin-rd., Pierce, Williams & Son, for Mrs. Holman; rebuilding of "Old Thatched House," 68, High-st., H. E. Davies & Son, for Ind. Coope & Allsopp, Ltd.; amended plans of factory, Woodend-av., Medcalf & Medcalf, for Milners Safe Co., Ltd.

Liverpool.—Director of Housing to prepare schemes and obtain estimates for construction of three culverts to carry roads over River Alt on Woolfall Heath estate.—Director of Housing submitted lay-out showing proposals for development of lands between West Derby-st. and Fairclough-ln. by erection of 200 flats.—Land on east side of premises in Edge-ln. been leased to H. Littlewood, Ltd.—Land on north-east side, Long-ln., Fazakerley, been leased to Eric Bemrose, Ltd., of Foster-st., Liverpool. On land on south side of Edwards-ln., Speke, dual factory to be erected at £10,000, and City Architect and Director of Housing to carry out the work by direct labour.—Land west side of Wavertree Nook-rd. to be sold to Irving & Mosscrop, 6, Stanley-st., Liverpool.

Market Harborough.—Improvements to be carried out to cattle market at £5,000.

Merton and Morden.—U.D.C. to make application to M.H. for sanction to borrow £51,426 to construct swimming bath on land in London-rd., Morden, £11,795 for erection of buildings, lay-out, etc., at cemetery, and £1,770 for erecting cleansing station and store, and also store and club room for auxiliary fire service.—Plans passed: Canteen and extension to garages, Charles Douglas & Co.'s factory, Lombard-rd.; film cutting rooms and offices for Publicity Films, Ltd., at 269, Kingston-rd.

Newbury.—T.C. approved: Additions to casual wards at Newbury Public Assistance Institution, for Berkshire C.C.

Northampton.—C.B. approved: Two pairs of shops and houses combined, opposite corners of junction of Thornton-rd. and Motspur-dr., T. Wilson & Son, Ltd.

Northumberland.—Northumberland Aged Miners' Homes Association contemplating further houses at Backworth and Seaton Delaval. Association's Architects, W. Dixon & Son, 1, Collingwood-st., Newcastle-on-Tyne.

Nuneaton.—T.C. approved:—P. W. Varney, offices, etc., Coton-rd.; J. Hextall, new streets and sewers and estate layout, 86 houses, off Higham-ln.; Lucas & Co., Ltd., rebuilding of licensed premises, "The White Swan," Market-pl.

Portsmouth.—T.C. to carry on with plan for construction of £1,000,000 Empire air base at Langstone Harbour.

Preston.—Senior Schools Deanery Committee decided to go forward with schemes for building two new schools on west side of town.

Reigate.—Mellersh & Neale, Ltd., propose to rebuild "Marquis of Granby" p.h. Architects, Williams, Pettett & Gardner, 38, High-st., Epsom. Quantity surveyors, Baker & Mallett, 81, High Holborn, W.C.1.

Rochester.—T.C. approved: Showrooms, etc., Corporation-st., L. G. Creed; 32 houses, Watling-st., Davis Estates, Ltd.; offices, Rochester Airport, Short Bros., Ltd.; showroom, garage, etc., rear of 141, High-st., G. Chapman.

St. Pancras.—B.C. approved: Flats and private garage, 54-78, Judd-st., 121-133, Cromer-st., 121-125, Harrison-st., and 24-36, Wakefield-st.; shops and flats, 83-85, Gray's Inn-rd., and 1, 1a and 2, Roger-st.; dance hall and additions, 273-275, Camden High-st.; redevelop Eversholt-st. and Polygon-rd.; hostel for Y.W.C.A. abutting on Augustus-st. and Park Village East; three-storey block of flats, 9 and 10, Fortess-gr.—Council to make application to L.C.C. for £150,569 for erection and equipment of new refuse destructor at James-st., Camden Town.

Salford.—E.C. recommended appointment of Percy Howard (A.), Manchester, architect and quantity surveyor in connection with proposed schools at Lancaster-rd., Pendleton, and on site of Sussex-st. school and chapel, Lower Broughton.

Sheffield.—Plans deposited with Corporation for additions to Eversley House social centre of St. Philip's Church. Cost about £1,800.

Sheffield.—T.C. approved:—Flat and licensed premises, Denby-st. and Unstone-st., John Smith's Tadcaster Brewery Co., Ltd.; garages and filling station, Herries-rd. and Goddard Hall-rd., J. Turner; additions, Newhall-rd., English Steel Corporation, Ltd.; 2 houses, canteens and workshop extensions, Upper Allen-st., Stephenson, Blake & Co., Ltd.; 2 sales-shops, offices, showroom and stores, Castle-st., T. Cooper; offices and sanitary accommodation, Loxley-rd., John Wood & Sons (Wisewood), Ltd.; 186 houses (scheme 18), Parson Cross estate, Estates Committee; pump house, offices, sub-station and shot blast plant, Liverpool-rd., Hadfield's, Ltd.; flat and licensed premises, Pitsmoor-rd., Wm. Stones, Ltd.; house and additions and alterations (Home for Rheumatic Children), Workhouse-ln. and Limb-ln., E.C.; 32 houses, Stradbroke-rd., F. Sayles; conveniences and shelter, Hathersage-rd., Health Committee; offices and safe, Rutland-rd., Sheffield Brick Co., Ltd.; pulverising plant house, Carlisle-st. East, English Steel Corporation, Ltd.; showrooms and offices, Burngreave-rd., S. B. Hogg; house and school, Meynell-rd. and Doe Royd-ln., E.C.; pavilion, High-

*See also List of Contracts Open.

****In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. List of abbreviations on page 129.**

cliffe-dr., G. Thompson; office, Brightside-ln., English Steel Corporation, Ltd.; warehouse, factory, garage and offices, Bailey-st., Cole Bros., Ltd.

Southampton.—Branch premises to be erected in High-st. and New-st., for Bank of England. Plans by A. V. Heal (F.), architect, 11, Gray's Inn-sq., London, W.C.1.

Southend.—Additions to be made to premises in High-st. for British Home Stores, Ltd. Plans by staff architect, Albert L. Farman (F.), Abbey House, Upper Baker-st., London, N.W.1.

South Shields.—Mr. Cocorello, architect, Osterley, Middlesex, to prepare final plans and specifications for St. Gregory's R.C. school, for Rev. J. Deans.—J. T. Smith, Swarland-av., Longbenton, Newcastle, agent for promoters of scheme for factory, nr. Mile End-rd.

Stepney.—B. E. and S. to construct an asbestos ceiling in Russian Vapour baths and in Turkish baths, Mile End Baths, at £142 15s.—Plans passed: Borough of Stepney, coal store at Northey-st. and Maize-row, adjoining Limehouse Cut.

Stoke-on-Trent.—T.C. approved: Prudential Assurance Co., Piccadilly and Market-st., Hanley, offices.

Stoke-on-Trent.—Approval of scheme for new City Abattoir at Fenton, at £204,569, being sought by Sanitary and Cleansing Committee.

Stretford.—T.C. to recondition roof lights over plunge bath at Trafford Park, as recommended by B.S., at £160.—Council to erect further instalment of 150 houses at Barton-rd. estate.—Plans passed: School, Barton-rd., Lostock, Stretford E.C.; central fire station, Park-rd., Stretford and Urmston Joint Fire Brigade Committee; club behind Quadrant, Great Stone-rd., Stretford Conservative Association; covered-way extension, Skerton-rd., W. J. Brookes & Sons, Ltd.; garage extension (commercial), Crofton-st., E. Griffiths.

Sunderland.—Sunderland Subscription and Literary Society proposes obtaining house in Park-ter., for conversion into library at £1,500.—Robinsons (Sunderland), Ltd., intend to build factory in Sea View, Seaburn. W. & T. R. Milburn, 17, Fawcett-st., architects.—Extensions to be made to premises in Back Holmside, for P. Wilkinson, Ltd. G. T. Brown & Son, Fawcett-st., architects.—Garage to be built at Humbledon View, for Simey, Iliff & Laing. W. & T. R. Milburn, architects.—Store to be built by British Ropes, Ltd., Portobello-ln. W. & T. R. Milburn, architects.

Swansea.—C.B. to convert 31 Rosehill-ter. into maisonettes, at £400.—B.E. and S. submitted layout for erection of approximately 384 houses and 4 shops on portion of Hanover-sq., Bonymaen housing site (scheme No. 2) and plans of roads, sewers and surface-water drains for such houses and shops, together with estimate of £23,716, for the work.—B.E. submitted plans, sections and estimates for widening and improvement of Mansel-st. and Cradock-st. from near Page-st. to Pell-st., at £18,453.—M.T. have under consideration scheme for reconstruction and diversion of Cadle Joint Bridge.—Plans passed: Lock-up shop, offices, caretaker's rooms, etc., 93 and 94, Mansel-st., Baptist Union of South Wales and Monmouthshire; rebuilding factory premises, Upper Strand, Jones Bros.; sub-station, Neath-rd., Landore, Electricity Committee.

Tipton.—Plans approved for new R.C. Church to seat 300. Plans by E. Bower Norris (F.), Stafford and London.

Tottenham.—T.C. recommend £15,700 for West-rd. flood relief scheme.—Plans passed: Nalgo Sports Club, sports pavilion and dressing accommodation, Ferry-ln. sports ground; Greyhound Racing Association, Ltd., judges' room, control box, Press box, and alterations, staff room, lavatories and totalisator room, Greyhound Racing Stadium, Green-lanes, north grand stand; Lebus, Harris, Ltd., extension block P.1, new staircase in place of lift, raising tank and new pump-room, Ferry-ln., Finsbury works; Dailley & Co., Ltd., store building, Garman-rd., Deeko works; Borough of Tottenham, sports pavilion, Markfield recreation ground; Couchman, H. Seymour & Sons, preliminary plan for lay-out of 24 flats, Park-ln., land site of No. 198; Spong & Co., Ltd., stores, offices and garage, Woodville-gr.; F. H. Hayllar, alteration and re-erection of part of factory, Gourley-pl., Crowlands-bldgs.; H. J. Trethewy, 32 lock-up garages, Lydford-rd.; St. Mary's Priory, gymnasium, St. Ann's-rd., rear of St. Mary's Priory; E. T. Roberts & Lee, extension to factory, Northumberland-pk.

Twickenham.—Plans passed by T.C.:—Warner Bros. First National Productions, Ltd., projection and rewind room, canteens and lavatories, Broom-rd., Teddington; G. P. Townsend, 56 flats, Kneller and Warren-rds.; Couch and Coupland, public-house, London-rd.; A. Hunt, 48 flats, Cambridge-rd., Teddington.

Twickenham.—U.D.C. amended plans submitted for boiler and dye house for H. March, Ltd., at 78, High-st.

Wakefield.—South Yorkshire Motors, Ltd., Corn-market, Pontefract, proposing showroom and garage, Barnsley-rd. Architect, W. H. Fearnley, Featherstone, nr. Pontefract.

Wallsend-on-Tyne.—Plans by W. B. Edwards, The College, Newcastle, accepted for church, at £7,000.

Wandsworth.—Interim plans passed by B.C.: Balham High-rd., office building at 10, Station-pde.; Streatham High-rd., extension to Nos. 148-154; Weir-rd., Balham, offices and additional garage accommodation at No. 9, for B.B.C.; West-rd., Clapham South, flats on site of Alver Bank; Roehampton Vale, Putney, 15 and 13 houses on site of Roehampton-villa; Balham High-rd., 27 lock-up garages at No. 324; South Side, Clapham Common, rebuilding and extension of garage and petroleum filling station at Nos. 29 and 29a; Garratt-ln., Springfield, additional garage at Veritas Works, and retention of existing garages; Point Pleasant, Southfield, three-storey office building at premises of Aluminium Plant and Vessel Co.; Wimbledon Park-rd., Southfields, three-storey block of 48 flats on site on north-western side; Leigham Court-rd., Streatham, two-storey extension on south-eastern side of Dene Hotel (No. 75); Factory-sq., Streatham, single-storey extension at northern corner of factory premises in; Garratt-ln., Springfield, extension to Anchor Mission (No. 273); Woodleigh-gdns., Streatham, block of maisonettes; Kimber-rd., Springfield, one-storey laundry drying-room and store shed at Coleman-ct.; Balham Park-rd. and Boundaries-rd., houses and garages on site at corner; Wandsworth-rd., Clapham North, rebuilding of Nos. 360 and 362.—Plans passed: Two shops with living accommodation over at 558, Garratt-ln.; A. R. Mawson, refreshment kiosk at running track, Tooting Common, and staff accommodation at Agnes Riley Memorial Ground, Atkins-rd.; G. D. Sweetman, mess-room at Garratt-pk. depot, Headworth-rd.

Wednesbury.—Plans are in preparation for new senior and junior schools on Manor-rd. site, for R.C. Authorities, by E. Bower Norris (F.), Stafford.

Wembley.—T.C. raise no objection to proposals of Middlesex C.C. to erect school clinic, county library branch and juvenile employment bureau in Stag-ln., Roe Green, Kingsbury.—Plans passed: R. J. Rees, factory, off Townsend-ln., J. Laing & Son, alterations to factory, Carlisle-rd.; Abbey Estate Development Co., additions to factory, Mount Pleasant; De Havilland Co., extension to laboratory, Stag-ln.; Haymills, Ltd., 6 shops and flats, Preston-rd.; Abbey Estates Development Co., factory, Mount Pleasant.—Middlesex C.C. been informed that Council are prepared to contribute £20,000 towards culverting section of Wembley Brook between Stonebridge Park and Elspeth-rd.—Council received formal consent of M.H. to borrowing £2,104 for heating and hot-water installation at Northern Fire Station.

Widnes.—T.C. approved: Parish hall, Liverpool-rd., Parochial Church Council of St. Michael, Ditton; reconstruction "Derby Arms" hotel, Widnes-rd., Greenall Whitley & Co., Ltd.; hotel ("Church View" Inn), Lunts Heath-rd., Greenall Whitley & Co., Ltd.

Wigton.—North-Eastern Housing Association, Metrovick House, Northumberland-rd., Newcastle-on-Tyne, propose 59 houses at Aspatria.

Wolverhampton.—T.C. approved: Messrs. Gilsons, Deans-rd., warehouse; J. McLean, Pendeford-av., 4 houses and shops; Chubb & Sons, Ltd., Wednesfield-rd., extension to factory; W. Butler & Co., Ltd., Oxley Moor-rd., new licensed premises.

100 YEARS

We enter the New Year And our Customers with grateful thanks.

JOHN STUBBS
MARBLE & QUARZITE LTD

Woolwich.—B.C. approved: Eley & Allen, 83, Powis-st., Woolwich, store building, rear of 71, Plumstead Common-rd., Plumstead; F. H. Jones & Partner, 8, Passey-pl., Eltham, S.E.9, on behalf of J. E. Webb & Co., Ltd., 16 semi-detached houses and garages, 3-17 and 2-16, Packmores-rd., Eltham Heights estate No. 2; Wright & Renny, 1, and 3, Powis-st., Woolwich, houses, Birbetts-rd., Eltham.

Worthing.—Entertainments and Baths Committee of T.C. have recommended that extensions to Pier Pavilion be carried out at £700.—Joint Town Planning Committee in favour of granting permission to Field Place Estate Co., Ltd., to develop certain land around Field-pl.

Worthing.—T.C. approved: F. Kenton, 26 houses, Vale-walk and Hillview-rise; W. Pye, for C. R. Cossor, Jupps-ln., showroom and garage, Jupps-ln.; Orchard Estates, for Sompting Manor Estates (Worthing), Ltd., 25 garages, Clarendon-rd.

Wortley.—R.D.C. received sanction to borrowing of £13,976 for new council offices.

Yarmouth.—M.H. agreed to T.C. inviting tenders for 198 flats and maisonettes on clearance areas 1 and 2 and to borrowing of £5,630, and £870 for road and sewer works.

York.—T.C. approved: Ainsty Building Estates, Ltd., 10 houses and 32 flats, sites W, X, Y and Z, Beech-av.; J. J. Hunt, Ltd., p.h., "Woolpack Inn," Peaseholme Green.

FIVE-YEAR PLAN

ABINGDON.—The R.D.C.'s programme amounts to £369,245, divided as follows: Public conveniences, £2,000; housing £75,750; sewerage and sewage disposal, £266,735; water supply, £19,760; open spaces, etc., £5,000.

CASTLE DONINGTON. — Expenditure amounting to a total of £57,352 is included in the R.D.C.'s five-year plan.

CLACTON.—Total cost of U.D.C.'s schemes is £638,612 and includes sea defence work, £84,150; sewerage and sewage disposal, £227,662; reconstruction work, £25,000; shelters and gardens, £4,000; new West-road, £25,600; Marine-parade West scheme, £2,050.

LANCASHIRE.—The C.C.'s five-year plan is to cost £12,000,000. Of this, £1,146,585 is to be allocated to higher education and by extensions to 17 grammar schools and the building of eight new ones £680,000 will be absorbed.

LUTTERWORTH. — Estimates totalling £106,130 are included in the R.D.C.'s programme.

READING.—The T.C. have approved a programme of £527,400 to include new civic buildings, £100,000; enlargement and reconstruction of Caversham sewage works, £90,000; site for new technical school, £25,000. The T.C. have also given tentative approval to schemes costing £125,800.

ROTHERHAM.—Schemes involving capital expenditure of £2,962,409 have been recommended to the Borough Council for submission to the Minister of Health.

TYNEMOUTH.—T.C.'s plan, to cost nearly £1,500,000, includes £50,000 for municipal buildings; hospitals, sanatoria, etc., £242,000; housing, £572,000; highways and bridges, £131,841; police buildings, £5,000; water supply, £128,000; and £42,600 for electricity supply.

WOKINGHAM.—R.D.C.'s estimated expenditure is £426,200. Provision is made for public health services, £281,850; water supplies, £73,800; provision of new houses, £50,550.

WORCESTER.—The City Council has been asked to adopt a programme involving an estimated expenditure of £975,122. The programme includes £107,050 for the Tolladine-road Housing Estate; £121,500 for new fruit market and central abattoir; £280,200 for electricity mains services and new showrooms; £88,999 for police and fire brigade buildings; and £90,000 for Guildhall extensions.

New Directorships.

As from January 1, Mr. W. G. Layfield (who has been with the firm for 20 years) has been appointed a director of Messrs. Rice and Son, Ltd., for the Margate branch, and Mr. S. H. Weedon a director for the Brighton branch.

A Correction.

In a list of tenders for offices and flats, 1, Dorset-street, W.1, given in our issue for December 23, it was indicated that Messrs. Gee, Walker and Slater had been given the contract. We are informed by the architects, Messrs. J. Stanley Beard and Bennett, that whilst the list of tenders was correct, the information that Messrs. Gee, Walker and Slater had received the contract was not correct, as no decision has yet been arrived at.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1938.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Crafts-men.	Lab-ourers.
Aberavon	1/7½	1/2½
Aberdare	1/7	1/2½
Abergavenny	1/7	1/2½
Abingdon	1/6	1/1½
Accrington	1/7½	1/2½
Aldeburgh	1/3½	11½
Aldershot	1/5½	1/1½
Alfreton	1/7½	1/2½
Alnwick	1/7	1/2½
Altrincham	1/7½	1/2½
Amble	1/7	1/2½
Amersham	1/6	1/1½
Ammanford	1/7½	1/2½
Andover	1/5½	1/1½
Ardingley	1/5½	1/1½
Arundel	1/5½	1/1½
Ascot	1/5½	1/1½
Ashby-de-la-Zouch	1/6	1/1½
Ashford (Kent)	1/5	1/0½
Ashford (Middlesex)	1/7½	1/2½
Ashington	1/7	1/2½
Ashtead	1/7½	1/2½
Ashton-under-Lyme	1/7½	1/2½
Aylesbury	1/5½	1/1½
Aylsham	1/4½	1/0½
Bagshot	1/5½	1/1½
Banbury	1/5½	1/1½
Barnsley	1/7½	1/2½
Barnstaple	1/5½	1/1½
Barrow-in-Furness	1/7½	1/2½
Barry	1/7½	1/2½
Basingstoke	1/5½	1/1½
Bath	1/6½	1/2
Batley	1/7½	1/2½
Beaconsfield	1/6	1/1½
Beccles	1/4	1/0
Bedford	1/6½	1/2
Berkhamsted	1/5	1/0½
Berwick	1/7	1/2½
Beverley	1/7½	1/2½
Bexhill-on-Sea	1/5½	1/1½
Bideford	1/5½	1/1½
Biggleswade	1/5	1/0½
Billericay	1/5	1/0½
Birchington	1/5	1/0½
Birkenhead	‡§1/10	¶
Birmingham	1/7½	1/2½
Bishop Auckland	1/7½	1/2½
Bishops Stortford	1/6	1/1½
Blackburn	1/7½	1/2½
Blackpool	1/7½	1/2½
Blyth	1/7½	1/2½
Bognor Regis	1/5½	1/1½
Bolton	1/7½	1/2½
Bournemouth	1/6½	1/2
Bracknell	1/5½	1/1½
Bradford	1/7½	1/2½
Bradford-on-Avon	1/4½*	1/0½
Braintree	1/5½	1/1½
Brentwood	1/7	1/2½
Bridgwater	1/5½	1/1½
Bridlington	1/7	1/2½
Brighouse	1/7½	1/2½
Brighton	1/6½	1/2
Bristol	1/7½	1/2½
Broadstairs	1/5	1/0½
Bromsgrove	1/6½	1/2
Buckley	1/7½	1/2½
Bungay	1/3½	11½
Burnham-on-Crouch	1/4	1/0
Burnley	1/7½	1/2½
Burslem	1/7½	1/2½
Burton-onTrent	1/7½	1/2½
Bury	1/7½	1/2½
Bury St. Edmunds	1/5	1/0½
Buxton	1/7	1/2½
Byfleet	1/6	1/1½
Cambridge	1/7	1/2½
Canterbury	1/5	1/0½
Cardiff	1/7½	1/2½
Carlisle	1/7½	1/2½
Carnforth	1/7½	1/2½
Castleford	1/7½	1/2½
Caterham	1/7½	1/2½
Chard	1/4½*	1/0½
Chatham	1/6	1/1½
Chelmsford	1/6	1/1½
Cheltenham	1/6½	1/2
Chepstow	1/6½	1/2
Chertsey	1/6½	1/2
Chester	1/7½	1/2½
Chesterfield	1/7½	1/2½
Chichester	1/5½	1/1½
Chorley	1/7½	1/2½
Cirencester	1/5*	1/0½
Clacton	1/5½	1/1½
Cleveleys	1/7½	1/2½
Clitheroe	1/7½	1/2½
Cobham (Surrey)	1/6½	1/2
Colchester	1/6½	1/2
Colwyn Bay	1/6½	1/2
Congleton	1/7	1/2½
Coventry	1/7½	1/2½
Cranbrook	1/5	1/0½
Cranleigh	1/5½	1/1½
Crawley	1/5½	1/1½
Crewe	1/6½	1/2
Cromer	1/4½	1/0½
Crowborough	1/5½	1/1½
Cuckfield	1/5½	1/1½
Darlington	1/7½	1/2½
Darwen	1/7½	1/2½
Daventry	1/6	1/1½
Deal	1/5	1/0½
Denbigh	1/6	1/1½
Derby	1/7½	1/2½
Devizes	1/4*	1/0
Dewsbury	1/7½	1/2½
Didcot	1/5½	1/1½
Diss	1/4	1/0
Doncaster	1/7½	1/2½
Dorchester	1/5*	1/0½
Dorking	1/6	1/1½
Dover	1/5	1/0½
Dovercourt	1/5½	1/1½
Driffield	1/6	1/1½
Droitwich	1/6½	1/2
Dudley	1/7½	1/2½
Dunstable	1/5½	1/1½
Durham City	1/7½	1/2½
Eastbourne	1/6½	1/2
E.Glam. (Mon. Val.)	1/7	1/2½
East Grinstead	1/5½	1/1½
Edenbridge	1/5½	1/1½
Ely	1/4	1/0
Epping	1/7½	1/2½
Exeter	1/6½†	1/2
Exmouth	1/5½	1/1½
Fakenham	1/4	1/0
Falmouth	1/6	1/1½
Fareham	1/6½	1/2
Faversham	1/5	1/0½
Felixstowe	1/6	1/1½
Filey	1/6	1/1½
Fleetwood	1/7½	1/2½
Flint	1/7	1/2½
Folkestone	1/5	1/0½
Frinton-on-Sea	1/5½	1/1½
Frome	1/4½*	1/0½
Gainsborough	1/6½	1/2
Gateshead	1/7½	1/2½
Gillingham (Kent)	1/6	1/1½
Glossop	1/7½	1/2½
Gloucester	1/6½†	1/2
Godalming	1/5½	1/1½
Goole	1/7½	1/2½
Gosport	1/6½	1/2
Grantham	1/6½	1/2
Gravesend	1/7	1/2½
Great Yarmouth	1/5½	1/1½
Grimsby	1/7½	1/2½
Guildford	1/5½	1/1½
Guilsborough	1/6	1/1½
Halifax	1/7½	1/2½
Hanley	1/7½	1/2½
Harpenden	1/6	1/1½
Harrogate	1/7½	1/2½
Hartlepools	1/7½	1/2½
Harwich	1/5½	1/1½
Haslemere	1/5½	1/1½
Hastings	1/5½	1/1½
Hatfield	1/6½	1/2
Haywards Heath	1/5½	1/1½
Hednesford	1/7	1/2½
Hemel Hempstead	1/6½	1/2
Henley-on-Thames	1/5½	1/1½
Hereford	1/5½*	1/1½
Herne Bay	1/5	1/0½
Hertford	1/6½	1/2
Heysham	1/7½	1/2½
Hitchin	1/6	1/1½
Hoddesdon	1/6½	1/2
Holt (Norfolk)	1/3½	11½
Horley	1/5½	1/1½
Horsham	1/5½	1/1½
Horwich	1/7½	1/2½
Huddersfield	1/7½	1/2½
Hull	1/7½	1/2½
Hunstanton	1/4	1/0
Huntingdon	1/4½	1/0½
Ilfracombe	1/5½	1/1½
Ingatestone	1/5½	1/1½
Ipswich	1/6½	1/2
Isle of Thanet	1/5	1/0½
Isle of Wight	1/4½	1/0½
Keighley	1/7½	1/2½
Kenilworth	1/7½	1/2½
Kettering	1/7	1/2½
Kidderminster	1/6½	1/2
King's Lynn	1/5	1/0½
Kirkham	1/7½	1/2½
Knowle	1/7	1/2½
Lancaster	1/7½	1/2½
Leamington	1/7½	1/2½
Leatherhead	1/6½	1/2
Leeds	1/7½	1/2½
Leicester	1/7½	1/2½
Leighton Buzzard	1/4½	1/0½
Letchworth	1/6	1/1½
Lewes	1/5½	1/1½
Lichfield	1/6½	1/2
Lincoln	1/7½	1/2½
Littlehampton	1/5½	1/1½
Liverpool	‡§1/10	¶
Llandudno	1/6½	1/2
Llanelly	1/7½	1/2½
London—		
12 m. radius	1/9*	1/3½
12-15 m. radius	1/8½*	1/3½
Long Eaton	1/7½	1/2½
Longton	1/7½	1/2½
Loughborough	1/7½	1/2½
Louth	1/6	1/1½
Lowestoft	1/5½	1/1½
Luton	1/7	1/2½
Macclesfield	1/7	1/2½
Maidenhead	1/6	1/1½
Maidstone	1/6	1/1½
Malvern	1/6	1/1½
Manchester	1/7½	1/2½
Manningtree	1/4	1/0
Mansfield	1/7½	1/2½
March	1/4½	1/0½
Margate	1/5	1/0½
Market Harborough	1/6½	1/2
Matlock	1/6	1/1½
Melton Constable	1/3½	11½
Melton Mowbray	1/6½	1/2
Merthyr Tydfil	1/7	1/2½
Middlesbrough	1/7½	1/2½
Middleton	1/7½	1/2½
Middlewich	1/6½	1/2
Milford Haven	1/5½	1/1½
Morecambe	1/7½	1/2½
Morley	1/7½	1/2½
Mundesley	1/4½	1/0½
Nantwich	1/6½	1/2
Nelson	1/7½	1/2½
Newark-on-Trent	1/6½	1/2
Newbury	1/5½	1/1½
Newcastle-on-Tyne	1/7½	1/2½
Newcastle-u-Lyme	1/7½	1/2½
New Forest	1/4½	1/0½
Newmarket	1/5½	1/1½
Newport, Mon.	1/7½	1/2½
Newport Pagnell	1/5½	1/1½
Northampton	1/7½	1/2½
Norwich	1/7½	1/2½
Nottingham	1/7½	1/2½
Nuneaton	1/7½	1/2½
Oakham	1/6	1/1½
Oldham	1/7½	1/2½
Ormskirk	1/7½	1/2½
Oxford	1/7	1/2½
Oxted	1/6	1/1½
Paignton	1/7	1/2½
Peterborough	1/7	1/2½
Plymouth	1/7½	1/2½
Pontefract	1/7½	1/2½
Pontypridd	1/7	1/2½
Portsmouth	1/6½	1/2
Port Talbot	1/7½	1/2½
Preston	1/7½	1/2½
Pulborough	1/5½	1/1½
Ramsgate	1/5	1/0½
Reading	1/6½	1/2
Redditch (Northern)	1/6½	1/2
Redhill	1/6	1/1½
Reigate	1/6	1/1½
Retford	1/6	1/1½
Rickmansworth	1/7	1/2½
Ripon	1/6	1/1½
Rochdale	1/7½	1/2½
Rochester	1/6	1/1½
Rugby	1/7½	1/2½
Saffron Walden	1/4	1/0
St. Albans	1/7	1/2½
St. Helens	1/7½	1/2½
St. Neots	1/4½	1/0½
Salisbury City	1/4½*	1/0½
Salisbury Plain	1/5½*	1/1½
Sawbridgeworth	1/5½	1/1½
Saxmundham	1/3½	11½
Scarborough	1/7	1/2½
Scunthorpe	1/7½	1/2½
Selby	1/7½	1/2½
Sevenoaks	1/6	1/1½
Sheerness	1/5	1/0½
Sheffield	1/7½	1/2½
Shipley	1/7½	1/2½
Shoeburyness	1/7	1/2½
Shoreham	1/6½	1/2
Shrewsbury	1/6½	1/2
Sittingbourne	1/5	1/0½
Skegness	1/6½	1/2
Sleaford	1/6	1/1½
Slough	1/6½	1/2
Southampton	1/7	1/2½
Southend-on-Sea	1/7	1/2½
Southport	1/7½	1/2½
South Shields	1/7½	1/2½
Spalding	1/5½	1/1½
Stafford	1/7	1/2½
Staines	1/6½	1/2
Stamford	1/6½	1/2
Stevenage	1/6	1/1½
Stockport	1/7½	1/2½
Stockton-on-Tees	1/7½	1/2½
Stoke-on-Trent	1/7½	1/2½
Stourbridge	1/7	1/2½
Stourport	1/6½	1/2
Stowmarket	1/4	1/0
Stratford-on-Avon	1/6	1/1½
Stroud	1/6†	1/1½
Sunderland	1/7½	1/2½
Sutton Coldfield	1/7½	1/2½
Swaffham	1/3½	11½
Swanage	1/5½*	1/1½
Swansea	1/7½	1/2½
Swindon	1/6*	1/1½
Tamworth	1/7	1/2½
Taunton	1/5½	1/1½
Tenterden	1/5	1/0½
Thames Haven	1/7½	1/2½
Thetford	1/4	1/0
Thorpe Bay	1/7	1/2½
Todmorden	1/7½	1/2½
Tonbridge	1/6	1/1½
Torquay	1/7	1/2½
Totnes	1/5½	1/1½
Trowbridge	1/4½*	1/0½
Truro	1/4½	1/0½
Tunbridge Wells	1/6	1/1½
Uppingham	1/6	1/1½
Uttoxeter	1/6	1/1½
Wakefield	1/7½	1/2½
Walsall	1/7½	1/2½
Walsden	1/7½	1/2½
Walton-on-Naze	1/5½	1/1½
Ware	1/6½	1/2
Warminster	1/4½*	1/0½
Warrington	1/7½	1/2½
Warwick	1/7½	1/2½
Wellingborough	1/7	1/2½
Wells (Norfolk)	1/3½	11½
Welwyn	1/6½	1/2
Welwyn Gar. City	1/7½	1/2½
West Bromwich	1/7½	1/2½
Westcliff-on-Sea	1/7	1/2½
Weston-super-Mare	1/6½	1/2
Weybridge	1/6½	1/2
Weymouth	1/5*	1/0½
Whitby	1/6½	1/2
Whitstable	1/5	1/0½
Widnes	1/7½	1/2½
Wigan	1/7½	1/2½
Wigton	1/6	1/1½
Willington	1/7	1/2½
Wilmslow	1/7½	1/2½
Winchester	1/5½	1/1½
Windermere	1/6	1/1½
Windsor	1/6½	1/2
Wisbech	1/4½	1/0½
Witham	1/5½	1/1½
Woking	1/6	1/1½
Wokingham	1/5½	1/1½
Wolverhampton	1/7½	1/2½
Woodbridge	1/4½	1/0½
Worcester	1/7	1/2½
Workington	1/6½	1/1½
Worksop	1/6	1/2
Worthing	1/5½	1/1½
Wrexham	1/7	1/2½
Wroxham	1/5	1/0½
Wycombe	1/6	1/1½
Wymondham	1/4	1/0
Yeovil	1/5½	1/1½
York	1/7½	1/2½

* Painters 1d. less than other Craftsmen. † Painters ½d. less than other Craftsmen. ‡ Plasterers 1/10.

¶ Tradesmen's Labourers 1/4½. Navvies and General Labourers 1/4

Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland see page 138.

CURRENT PRICES FOR BUILDING WORK IN LONDON.

Note.—These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10 per cent. on the prime cost, without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts, and from 1s. 6d. per £100 Fire Insurance. **The whole of the information given is copyright.**

		£	s.	d.
PRELIMINARIES.				
Hoardings, with suitable gate, 8 ft. high	per ft. run	0	3	0
Steel scaffolding for brickwork	per sqre.	1	5	0
Steel scaffolding for stone building	,,	1	10	0
Steel gantry for stone building	per ft. run	2	10	0
Office, shed for cement and mess-room	say	75	0	0
EXCAVATOR.				
Digging, throwing out and filling into carts and carting to shoot, 5 ft. deep	per yd. cube	0	7	9
Add if stiff clay	,,	0	1	0
Add for every additional 5 ft.	,,	0	0	6
Add if in trenches	,,	0	0	9
Add to price of digging for breaking up concrete foundation and brickwork	,,	0	10	0
Return, fill and ram	,,	0	1	9
Fill into carts and cart away	,,	0	3	6
Planking and strutting to trenches	per ft. super	0	0	3½
Planking and strutting to sides of basement excavation next roadway	,,	0	1	4
Needling, flying and raking shores and removing after and carting away	per ft. cube	0	6	9
CONCRETOR.				
Portland cement and ballast concrete 1-6 in. foundations	per yd. cube	1	2	0
Add in underpinning in short lengths	,, ,,	0	6	0
Concrete in floors, ¾ in. aggregate, and sand, 1-2-4—				
4 in. thick	per yd. super	0	3	4
6 in. thick	,, ,,	0	4	8
Add if trowelled smooth	,, ,,	0	0	9
Add for hoisting, each floor	,, ,,	0	0	3
Concrete 1-2-4 in. beams and stanchions	per ft. cube	0	1	4
Concrete in lintols, with steel rod reinforcement each 4½ in. width and shuttering	,, ,,	0	4	0
1½ in. centering, with stout supports for concrete floors	per square	2	2	0
Do. to sides and soffites of beams	per ft. super	0	0	8
Do. to sides of stanchions	,, ,,	0	0	7
Steel rod reinforcement under ⅝ in. diameter, cut, bent and placed in position	per cwt.	1	8	0
Do. do. over ⅝ in. diameter	,,	1	5	0
BRICKWORK.				
Reduced to 1½ brick in flettons, lime mortar	per rod	26	0	0
Add for 2nd hard stocks	,,	8	0	0
Add for Blue Staffordshire	,,	22	0	0
Add to above if in 1-4 cement	,,	0	15	0
Add if in backing to stonework	,,	1	5	0
Add if in underpinning in cement	,,	4	10	0
Add if above 40 ft. to 60 ft. high	,,	2	0	0
SUNDRIES.				
Damp course in double course of slates, breaking joint	per ft. super	0	0	11
Vertical do. do.	,,	0	1	2
Bitumastic	,,	0	0	5
Lead core	,,	0	0	10
Cut, tooth and bond new to old brickwork	,,	0	1	0
Rake out joints of brickwork	,,	0	0	1
Leave chase for concrete floor	per ft. run	0	0	2
Cut chase 4½ in. deep for concrete floor	,,	0	1	2
Leave chase for vertical pipe	,,	0	0	4
Cut chase for vertical pipe	,,	0	1	4
Rake out joint for flashings and point	,,	0	0	2
Do. stepped do.	,,	0	0	4
Do. for asphalt skirting	,,	0	0	2
Build in ends of timbers	each	0	0	4
Do. steel joists up to 12 in. deep	,,	0	0	6
Do. step and make good facings	,,	0	1	6
Set and flaunch chimney pots	,,	0	7	6
Render fire openings	,,	0	2	0
Bed and point door frames one side	,,	0	3	0
Do. both sides	,,	0	4	6
Do. window frames, one side	,,	0	4	0
Setting only register grate	,,	1	0	0
Do. interior hearths and mantles	,,	1	15	0
Do. kitchen range, large	,,	5	0	0
Fix air brick and form flue	,,	0	2	0
Cut holes for pipes and make good facings, 9 in. wall	,,	0	2	0
Do. do. 13½ in. wall	,,	0	2	6
Do. large pipes and do. 9 in. wall	,,	0	3	0
Do. do. 13½ in. wall	,,	0	3	6
FACINGS.				
Extra for facings in Flemish bond for each 10s. per thousand over the price of Flettons	per ft. super	0		1½
Pointing facings to approval	,,	0		3
Arches extra over Flettons in stocks	,,	0		8
Do. in reds	,,	1		0
Do. rubbed and gauged in putty	,,	5		9

		£	s.	d.
PARTITIONS.				
2 in. breeze slab partitions in cement	per yd. super		4	0
3 in. do. do.	,,		4	6
2 in. hollow-tile do.	,,		4	9
3 in. do. do.	,,		5	6
PAVING.				
1 in. granolithic paving gauged 5—2	per yd. super		2	7
1½ in. do. do.	,,		2	11
1 in. × 6 in. covered skirting	per ft. run		0	10
ASPHALT (NATURAL).				
½ in. horizontal damp course	per ft. super		0	6
⅝ in. horizontal damp course	,,		0	8
½ in. vertical do. in two layers	per yd. super		9	6
½ in. in flats, two layers	,,		6	0
Angle fillet	per ft. run		0	3
6 in. skirting and angle fillet and jointing top edge	,,		1	0
DRAINAGE.				
Excavate, trench for drain and throw out, return, fill and ram, and including any planking and strutting required, and cart away surplus earth per ft. run	1 ft. deep	0	5	
	2 ft. deep	0	10	
	3 ft. deep	1	3	
	4 ft. deep	1	8	
	5 ft. deep	4	2	
	6 ft. deep	5	0	
	7 ft. deep	5	10	
	8 ft. deep	6	8	
4 in. best quality glazed stoneware drain pipe, socketed joints, yarn and neat cement, on and including cement concrete bed, 18 in. wide and 6 in. thick, and benched up on each side of pipe	per ft. run		2	4
6 in. do. do. do. but concrete bed 20 in. and 6 in. thick	,,		3	0
9 in. do. do. do. but concrete bed 23 in. wide and 6 in. thick	,,		4	11
Extra for 4 in. bends	each		2	6
Do. 6 in. ,,	,,		3	6
Do. 9 in. ,,	,,		5	6
Extra for 4 in. junctions	,,		2	9
Do. 6 in. ,,	,,		3	9
Do. 9 in. ,,	,,		6	0
4 in. stoneware gully, encased in concrete and making good granolithic paving	,,		13	0
6 in. do.	,,		14	0
9 in. do.	,,		18	6
4 in. stoneware interceptor, and surround with concrete	,,	1	5	0
6 in. do.	,,	1	10	0
9 in. do.	,,	2	10	0
IRON DRAINS.				
4 in. C.I. drain and laying and jointing in molten lead	per ft. run		3	4
6 in. do. do.	,,		5	0
Extra for 4 in. bends	each		10	0
Extra for 6 in. bends	,,		18	0
Extra for 4 in. junctions	,,		17	6
Extra for 6 in. junctions	,,		30	0
MASON.				
Bath stone and all labour, fixed	per ft. cube		10	9
Portland stone and all labour, fixed	,, ,,		17	9
York stone templates, fixed	,, ,,		12	6
York stone steps, fixed	,, ,,		16	0
York stone cills, fixed	,, ,,	1	2	0
SLATER.				
24 × 12 Bangor slates laid to 3 in. lap secured with zinc nails	per square	3	18	5
20 × 10 do.	,,	3	13	6
16 × 8 do.	,,	3	11	6
Extra to eaves course	per ft. run		0	9
Extra to top edge and square abutments	,,		0	4½
Extra to verge and labour only, bedding and pointing	,,		0	7½
Raking, cutting and waste	,,		0	7
Half-round red ridge tile	,,		1	2
Half-round blue ridge tile	,,		1	8
Fixing only soakers	per dozen		0	9
Red hand-made sand-faced tiles laid to 4 in. gauge, nailed every fifth course with galvanised iron nails	per square	3	0	0
Extra to eaves course	per ft. run		0	5
Extra to top edge and square abutments	,, ,,		0	3½
Extra to verge and bed and point	,, ,,		0	11
Half-round ridge	,, ,,		1	4
Bonnet hips, including cutting and waste (both sides)	,, ,,		3	8
Valley tiles, including cutting and waste (both sides)	,, ,,		3	0
Fixing only soakers	per dozen		0	9

CURRENT PRICES FOR BUILDING WORK IN LONDON.—continued.

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per ft. cube	4	0
Do. joints	„ „	4	6
Do. roofs, etc.	„ „	5	3
Do. trusses	„ „	6	9

		¾in.	1in.	1¼in.
Deal rough close boarding	per sq.	32/-	38/-	47/-
Battens for slating	„	10/-	11/-	12/-
Centre for arches	per ft. super			1 6
Gutter boards and bearer	„ „			1 0

FLOORING.

		¾in.	1in.	1¼in.	1½in.
Deal edges shot	per sq.	—	41/-	49/-	58/-
Do. tongued and grooved	„	—	46/-	55/-	67/-
Do. matchings	„	42/-	47/6	—	—
Moulded skirtings, including backings and grounds	per ft. super	1/4	1/7	1/9	2/3
Mitres	each	-/6	-/8	-/9	1/-
Stop ends	„	-/3	-/4	-/4	-/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half in. moulded sashes	per ft. super	1	9
Two in. do. do.	„ „	2	0
Add for fitting and fixing	„ „	0	2
Deal cased frames, 1 in. linings, 1¼ in. pulley and stiles, 2 in. moulded sashes, in squares, hardwood cill, double hung with pulleys, lines and weights, average size	„ „	3	3

DOORS.

		1¼in.	1¾in.	2in.
Two-panel square framed	per ft. super	2 1	2 3	2 5
Four-panel do.	„ „	2 4	2 6	2 9
Two-panel moulded both sides	„ „	2 6	2 9	2 11
Four-panel do. do.	„ „	2 9	2 11	3 2

		£	s.	d.
Flush doors. 1¼ in. to 2 in. finished thickness skeleton core, covered each side with Columbian pine ply, solid pine edging, 2 ft. 6 in. by 6 ft. 6 in.	each	1	15	0
Do., covered with Gaboon mahogany ply, solid mahogany edging, 2 ft. 6 in. by 6 ft. 6 in.	„	2	0	0
Solid core, all as first item	„	2	0	0
Solid core, all as second item	„	2	5	0
Shaped peep holes, 4 sided	„	0	5	0
Hexagonal holes	„	0	6	0
Circular holes	„	0	7	0

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per ft. cube	12	0
Hardwood do. do.	„ „	36	0

		1in.	1¼in.	1½in.
Plain deal jamb linings, framed	per ft. super	1 7	1 8	1 11
Deal shelves and bearers	„ „	1 2	1 4	1 7
Add if cross-tongued	„ „	-/2	-/2	-/2
Deal window board, tongued to oak cill and bearers	„ „	1 6	1 9	2 0
Deal moulding, tongued and grooved to window board	per ft. run			0 6

SUNDRIES.

		s.	d.
Deal architrave, including mitres per sectional inch.	per ft. run	0	1
Glazing beads, deal fixed	„ „	0	2
Do. fixed with brass screws and cups	„ „	0	4
Rebate	„ „	0	0½
Groove	„ „	0	0½
Notching	„ „	0	2
Tongued and grooved angle	„ „	0	3½
Rounded heel and hollow	„ „	0	2½

STAIRCASES.

		1in.	1¼in.	1½in.	2in.
Deal treads and risers on and including rough brackets	per ft. super	2/-	2/3	2/8	—
Deal strings, wrot and framed	„ „	—	—	2/2	2/8
Housings	each				0 9
Mahogany handrail, average 3 in. x 3 in.	per ft. run				5 6
Add if ramped	„ „				11 0
Add if wreathed	„ „			1	2 0

FIXING ONLY IRONMONGERY.

	s.	d.
Barrel bolts	0	8
Sash fasteners	1	0
Casement fasteners	1	2
Casement stays	1	2
Flush bolts	1	6
Cupboard locks	1	6
Rim locks and furniture	2	0
Mortice locks and furniture	4	0
Floor springs, including oil	20	0
Overhead springs	5	0

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	19	6
Compound girders	„	22	6
Stanchions	„	24	3
Roofwork	„	29	6

RAINWATER GOODS.

		3 in.	4 in.	5 in.	6 in.
Half-round eaves gutters and fixing	per ft. run	1/3	1/4	1/10	1/11
Ogee do. do.	„ „	1/5	1/6	2/1	2/9
R.W. pipe and fixing	„ „	1/7	2/1	—	—
Extra for shoes and bends	each	3/3	4/6	—	—
Do. stopped ends	„	1/3	1/7	2/-	3/-
Do. nozzles and angles	„	2/7	3/-	4/2	4/8

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	38	0
Do. in flats	„	36	6
Extra labour and solder in cesspools	each	6	0
Welt joint	per ft. run	0	4
Soldered seam	„ „	1	6
Copper nailing—close	„ „	0	3
Do. do. open	„ „	0	2
Soldered dots	each	2	0
Bossed ends to rolls	„	0	6

	½in.	¾in.	1in.	1¼in.	1½in.	2in.	4in.
Lead overflow per ft. run	-/8½	1/-	1/6	1/9	2/1	2/9	—
„ service „	1/2	1/9	2/8	3/6	4/-	5/3	—
„ soil „	—	—	—	—	—	—	6/-
Bends in pipe each	—	—	—	—	1/9	2/-	5/6
Wiped solder joints „	1/9	2/3	2/6	3/-	3/4	4/-	5/9
Lead traps and cleaning screws „	—	—	—	6/6	9/6	—	—
Stopcocks and joints „	11/-	14/-	18/-	—	—	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yd. super	2	0
Do. narrow widths	per ft. super	0	4
Do. and set with Sirapite	per yd. super	2	3
Do. narrow widths	per ft. super	0	4
Do. and set with Keenes	per yd. super	3	0
Do. narrow widths	per ft. super	0	5½
Add sawn lathing	per yd. super	1	4
Add metal lathing (not including hangers or runners for suspended ceilings)	„ „	2	4
Portland cement screed	„ „	1	7
Do. plain face	„ „	3	3
Mouldings in plaster	per 1 in. girth	0	1½

GLAZIER.

		s.	d.
24 oz. sheet	per ft. super	0	7½
26 oz. sheet	„ „	0	8
24 oz. Obscured sheet	„ „	0	8½
Double Cathedral	„ „	0	9½
Majestic	„ „	0	10
Flemish	„ „	0	10
Pinhead Morocco	„ „	0	10
¼ in. rough rolled or cast plate	„ „	0	10½
¼ in. wired cast plate	„ „	1	1½

PAINTER.

		s.	d.
Preparing and distempering, two coats	per yd. super	0	7½
Knotting and priming	„ „	0	7
Plain painting, one coat	„ „	0	9
Do. two coats	„ „	1	2
Do. three coats	„ „	1	9
Do. four coats	„ „	2	4
Graining	„ „	2	3
Varnishing, twice	„ „	1	9
Sizing	„ „	0	3
Flatting	„ „	0	7
Enamel	„ „	1	1
Wax polishing	per ft. super	0	6
French polishing	„ „	1	2
Preparing for and hanging paper	per piece 2/- to 4/-		

PRICES CURRENT OF MATERIALS*

Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry.

CHANGES OF THE WEEK.—Lead drops by 10/-.

BRICKS, &c.

Delivered to site, City and Central Area, Full Lorry Loads.

	£ s. d.
Best Stocks	4 15 0
Second Hard Stocks	4 8 0

Per 1,000. Delivered at London Goods Stations.

	King's Cross Station. per 1,000.	To sites in W.C. District. per 1,000
	s. d.	s. d.
Pressed bricks	46 3	50 6
Cellular bricks	46 3	50 6
Keyed bricks	48 3	52 6
Cellular Keyed bricks	48 3	52 6
Rustic bricks	*66 3	*70 6
Cellular Rustic bricks	*66 3	*70 6
Single Bullnose	64 3	68 6
White bricks	*66 3	*70 6
Sandfaced bricks	—	75 6

* Subject to a special discount of 2s. per 1,000 if accompanied by order for Pressed

	£ s. d.
White Midhurst Facing Bricks (delivered London site)	3 12 6
Best blue Pressed Staffs	8 6 0
Do., Bullnose	8 16 0
Blue Wire Cuts	7 4 0

Best Stourbridge Fire Brick:—

	£ s. d.		£ s. d.
2½ in.	7 15 0	9 in.	8 15 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	24 0 0	D'ble Str'tch'rs	32 10 0
		D'ble Headers	29 10 0
Headers	23 10 0	One side & two ends	33 10 0
Quoins, Bullnose and 4½ in. Flats.	30 10 0	Splays and Squints	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

PHORPRES" HOLLOW PARTITION BLOCKS.

2" per yd. sup.	2 3	3" per yd. sup.	2 9
2½" " "	2 6	4" " "	3 1

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup.	2 0
2½" " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½" " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" x 4"	3 9

Per yard super d/d. Free on site, London.

	s. d.		
Thames Ballast	7 3	per yd.	delivered 2 miles radius Paddington.
Pit Ballast	6 3	" "	
Pit Sand	7 9	" "	
Washed Sand	8 3	" "	
¾in. Shingle	7 3	" "	
¾in. Broken Brick	11 3	" "	
Pan Breeze	8 3	" "	

CEMENT.

Best British Portland Cement. Standard Specification delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable):—

	£ s. d.
4 ton loads and upwards site Per ton	2 2 0
1 ton to 4 tons site	2 5 0
Alongside Vauxhall in 80-ton lots	1 19 6
"Ferrocrete" Rapid Hardening Cement:—	
4 ton loads and upwards site	2 8 0
1 ton to 4 tons site	2 11 0
Alongside Vauxhall in 80-ton lots	2 5 6

Stores in Reserved Bins at Works 1/6 ton extra.

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett, if returned in good condition within three months, carriage paid.

"Aquacrete" Water Repellent, "BlueCircle" Cement, 30/- per ton extra on ordinary "Blue Circle" Portland Cement prices.

"Colorcrete" Nos. 1 and 2 Coloured Rapid Hardening Portland Cement in 1-cwt. paper bags free (non-returnable) in 1-ton lots and upwards site. 3 9 0

"Colorcrete," not rapid-hardening, in 1-cwt. paper bags free (non-returnable), according to colour, from £7 to £15 10s. per ton.

"Snowcrete" White Portland Cement in 1-cwt. paper bags free (non-returnable) 1 tons and upwards site. 8 15 0

Super Cement (Waterproof) paper bags free 3 12 0
Roman Cement £6 15 Keene's Cement, White 6 0 0
Parian Cement £6 0 " Pink 5 12 6
Cementone Colours for cement according to tints per cwt. from £2 16s. 0d.

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	3 2 0	Sirapite, Coarse	3 10 0
" White	3 12 6	" Finish	3 18 0
Pioneer	3 10 6		
Super Carbo	2 7 6	4-ton loads & over London Area, paper bags free.	
Carbo Setting	2 12 6		
Best Ground Blue Lias Lime	1 17 6	Grey Stone Lime	2 2 0
		Chalk Lime	2 2 0
GraniteChippings	1 2 0	Hair per cwt.	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.

Stourbridge Fireclay in sacks 37s. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube s. d. 2 10½

BEER STONE—RANDOM BLOCK—

Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. "	3 1½

Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.

PORTLAND STONE—

	s. d.
Brown Whitbed, in random blocks of 20 cb. ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 5
Do. do. delivered on road waggons as above stations, per ft. cube	4 6

White basebed, 3d. per ft. cube extra.

NOTE.—1d. per ft. cube extra for every 5 cb. ft. over 20 ft. *average* and ½d. beyond 30 cb. ft.

HOPTON-WOOD STONE—

F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb.	14 0
Sawn two sides	22 6

HOPTON-WOOD STONE—

Sawn three or four sides	27 9

YORK STONE, BLUE.—*Robin Hood Quality.*

Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) per ft. super	5 0
6 in. rubbed two sides, ditto "	5 6
3 in. sawn two sides slabs (random sizes) "	2 3½
3 in. to 2½ in. sawn one side slabs (random sizes) (pav.) "	1 6½
1½ in. to 2 in., ditto "	1 3½

HARD YORK—

Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landings to sizes (under 40 ft. super) per ft. super	5 1½
6 in. rubbed two sides, ditto "	6 1½
6 in. sawn two sides slabs (random sizes) "	3 1½
3 in. ditto ditto "	2 5
3 in. self-faced random flags... Per yd. super	7 6

CAST STONE.

Delivered in London area in full van loads, per ft. cube: Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0 l.

HARD WOOD.

1 INCH AND UP THICK

	£ s. d.
Average price for prime quality.	
Dry Austrian Wainscot, per ft. cube	0 17 0
Dry American and/or Japanese Figured Oak, per ft. cube 10 0 to	0 12 6
Dry American and/or Japanese plain Oak, per ft. cube	0 11 6
Dry sq. edged Honduras Mahogany, per ft. cube	0 15 0
Dry log-cut Honduras Mahogany, per ft. cube 12 6 to	0 16 6
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 6
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. 4 7 0 to	5 10 0

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 × 11	£26 10	3 × 6	£22 10
4 × 9	26 10	3 × 11	26 10
4 × 8	24 10	2 × 11	26 10
4 × 7	24 10	3 × 9	23 10
3 × 8	22 10	2½ × 9	23 10
3 × 7	22 10	3 × 4½	22 0
2½ × 7	22 10	3 × 4	22 0

PLANED BOARDS.

1 × 11	£26 10	1 × 9	£25 0

PLAIN EDGE FLOORING.

Inches.	Per sq.	Inches.	Per sq.
⅜	17/-	1¼	28/-
¾	20/-	1½	35/-
1	22/-		

TONGUED AND GROOVED FLOORING.

Inches.	Per sq.
1	22/6
1¼	29/-
1½	36/-

MATCHING (BEST).

Inches.	Per sq.
⅝	18/-
¾	20/-
1	26/-

ins. BATTENS. s. d.
¾ × 2 per 100 ft. 2 6

SAWN LATHS. s. d.
Per bundle. ½

SLATES.

First quality slates from Penrhyn or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	31 5 0	18 by 10	16 10 0
22 by 12	26 5 0	18 by 9	14 17 6
22 by 11	23 12 6	16 by 10	14 7 6
20 by 12	23 2 0	16 by 8	11 5 0
20 by 10	20 15 0		

TILES.

Delivered at London rate stations in full truck loads (not less than 6 tons) Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	£4 2 0
ditto hand-made ditto	4 17 0
Ornamental ditto	5 2 6
Hip and valley tiles (per dozen) Hand-made	0 8 6
Machine-made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted	£16 10 0
Plain Compound Girders	19 10 0
" Stanchions	21 5 0
In Roof Work "	25 0 0

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	17 12 6	⅝ in. to ½ in.	16 2 6
¾ in.	16 12 6	⅞ in. to 2½ in.	15 12 6

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £10 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars. Sizes. ⅛in. to ⅜in.	Standard Tubes Sizes. ⅛in. to 2in.	Standard Flanges. Sizes. ⅛in. to 2in.	Standard Fittings.
	%	%	%	%
Gas	60	65	62½	58½
Water	57	62½	62½	55
Steam	53½	58½	51½	50
Gal. gas	50	55	51½	48½
Galv. water	45	50	43½	43½
Galv. steam	38½	43½	38½	40

C.I. HALF-ROUND GUTTERS—London Price ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3in.	1/9½	1/8	7d.
3½in.	2/1	2/-	8½d.
4in.	2/1	2/-	8½d.
4½in.	2/2½	2/1	9d.
5in.	2/4½	2/4	10d.
O.G. GUTTERS.			
3in.	2/1	2/-	8½d.
3½in.	2/3¼	2/2	9½d.
4in.	2/5	2/4	10½d.
4½in.	2/6	2/5	1/0½
5in.	2/10	2/9	1/2½

RAIN WATER PIPES, &c.

Per yd. in 6ft.	Pipe.	Bends, stock angles.	Branches. stock angles.
2in.	2/8½	1/8	2/5½
2½in.	2/9½	1/11	2/11½
3in.	3/8	2/4½	3/7½
3½in.	4/1	2/10½	4/1½
4in.	4/9½	3/5	5/-

Less 20 per cent. trade discount.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Stock,

	Pipe.	Bends, stock angles.	Branches. stock angles.
	s. d.	s. d.	s. d.
2in. per yd. in 6fts.	3 5	2 5	2 11
2½in. "	3 10	2 8	3 8
3in. "	4 2	2 11	4 4
3½in. "	4 7	3 8	5 0
4in. "	5 1	4 0	5 10

L.C.C. COATED DRAIN PIPES.—London Prices, ex Stock.

	Pipe.	Bends, stock angle,	Branches, stock angles.
	s. d.	s. d.	s. d.
2in. per yd. in 9ft. lengths	4 9	5 4	8 9
4in. cwt. qr. lbs.	1 1 20	6 9	6 3 11 0
5in. "	1 2 22	8 4	11 0 16 11
6in. "	2 0 6	10 0	12 11 21 3

Gaskin for jointing 45/- per cwt.

IRON—	Per ton. £ s. d.	London £ s. d.
Common Bars	12 15 0	13 15 0
Staffordshire Crown Bars—Good merchant quality	1 10 0 to	16 0 0
Staffordshire Marked Bars	18 0 0	19 0 0
Mild Steel Bars	17 18 0	13 18 0
Steel Bars, Ferro-Concrete quality, basic price	14 8 0	15 8 0
Hoop iron, basic prices	14 8 0	15 8 0
Galvanised	21 8 0	26 8 0

HUDDERSFIELD
Building Society

Experience has shown that the arrangements made by the Huddersfield to assist occupier borrowers have given the utmost satisfaction, and the service rendered has been greatly appreciated by builders' clients.

Write for information to The Huddersfield Building Society, Britannia House, 203, Strand, London, W.C.2, or to the Head Office, Britannia Buildings, Huddersfield. Andrew Stewart, C.A., Managing Director.

WHEN YOU INVEST—A HOUSE IS BEST

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(*Cont.*)

IRON—	Per ton in London. £ s. d.	£ s. d.
Soft Steel Sheets, Black—		
Ordinary sizes, to 20 g. ..	16 5 0 ..	17 5 0
" " 24 g. ..	17 5 0 ..	18 5 0
" " 26 g. ..	18 5 0 ..	19 5 0
Sheets, Flat, Best Soft Steel, C. R. and C.A. quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	17 10 0 ..	18 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	19 10 0 ..	20 10 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 15 0 ..	20 15 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g..	19 5 0 ..	22 15 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	21 5 0 ..	23 5 0
Sheets, Galvanised, Flat, Best quality—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	19 15 0 ..	22 15 0
Best Soft Steel Sheets, 22 g. and 24 g.	20 15 0 ..	22 5 0
Best Soft Steel Sheets, 26 g.	22 5 0 ..	23 5 0
Cut Nails, 3 in. to 6 in.	19 10 0 ..	21 10 0
(Under 3 in. usual trade extras.)		

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats and delivery to job, average price about 1s. 4d. to 1s. 7½d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 1
Strong sheet	"	1 3
Thin	"	1 4
Copper nails	"	1 3
Copper wire	"	1 3

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CRUTCH HEAD SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
29/-	45/- per doz.

CHROMIUM PLATED TOILET SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
40/-	59/- per doz.

SCREW DOWN STOP COCKS FOR IRON.

¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
31/-	41/6	75/-	175/-	250/-	396/-	per doz.		

SCREW DOWN STOP COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
42/6	65/-	102/-	195/-	410/-	510/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
7/6	9/-	14/-	24/-	37/6	54/-	per doz.

HEAVY CROYDON BALL VALVES.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	
33/6	55/6	85/-	165/-	237/-	per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
9/-	11/-	16/6	29/-	42/-	45/-	per doz.

BRASS FERRULES OR SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.	
9/6	11/6	20/6	26/-	37/-	per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1¼ in.	1½ in.	2 in.	3 in.	
6 lb. Lead P...	17/6	23/-	32/6	66/-	per doz.
8 lb. Lead S...	21/6	27/6	39/6	73/-	per doz.

SOLDER.—Plumbers', 1/1, Tinmen's, 1/3, Blowpipe, 1/5 per lb.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil, in pipes	per gallon	0 2 7
" " " in barrels	"	0 2 9
" " " in drums	"	0 2 11
Boiled " " in barrels	"	0 3 0
" " " in drums	"	0 3 2
Turpentine, in barrels	"	0 3 2
" in drums (10 gals.) ..	"	0 3 4
Genuine Ground English White Lead, per ton		50 0 0

(In not less than 5-cwt. casks.)
Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.

GENUINE WHITE LEAD PAINT.
"Father Thames," "Nine Elms," "Park," "Supremus," "St Pauls," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots

		£ s. d.
	per ton delivered	69 0 0
Red Lead, Dry (packages extra)..	per ton	38 0 0
Best Linseed Oil Putty	per cwt.	0 14 9
Size. XD quality	f.kn.	0 3 6

VARNISHES, &c.

	Per gallon.	
Oak Varnish	Outside	0 14 0
Fine Do.	"	0 16 0
Fine Copal	"	0 18 0
Pale Copal	"	1 0 0
Pale Opal Carriage	"	1 4 0
Best do.	"	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	"	0 18 0
Fine Copal Cabinet	"	1 2 0
Fine Copal Flatting	"	1 0 0
Hard Drying Oak	"	0 18 0
Fine Hard Drying Oak	"	0 19 6
Fine Copal Varnish	"	1 0 6
Pale do.	"	1 12 0
Best do.	"	1 2 6
Best Japan Gold Size		1 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cutrass Black Enamel		0 7 0

THE SCOTTISH BUILDER

NEW BUILDINGS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Where business representatives cannot be seen personally at this stage, this should be mentioned. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

ABERDEEN. — RECONSTRUCTION. — The garage and workshops at Spring Gardens are to be reconstructed by the Aberdeen Cinemas, Ltd., into a large ice-rink.

BANFFSHIRE.—EXTENSIONS.—From plans by their own architects the C.C. is to carry out extensions to Crossroads school and Bracoden school.

BUCKHAVEN.—FIRE STATION.—The T.C. has agreed to proceed with a new fire station at £3,000.

BUSBY.—SHOPS.—The Kinning Park Co-operative Society, Glasgow, have acquired property at Store-land, where they propose to erect branch shops.

DALMUIR.—FACTORY.—The War Office announces that it has been decided to establish a Royal Ordnance Factory at Dalmuir, near Glasgow. The site is on the yard of William Beardmore and Co., Ltd.

DUMBARTON.—BUILDING.—The Dean of Guild Court has granted permission to Messrs. Hiram Walker and Sons (Scotland), Ltd., to erect an extension to the Innerleven Distillery. The Equitable Co-operative Society have decided to proceed with an extension to their garage at Park-street, at £2,000.

DUNDEE.—BUILDINGS.—Plans submitted at the office of the City Engineer: Kemnay-place—villas for C. R. W. Gray, architects, Thoms and Wilkie, 21, South Tay-street; Murraygate (76)—alterations for J. Hepworth and Son, Ltd., architects, Mills and Shepherd, 9, South Tay-street; Perth-road and Hawkhill-place—College for Governors of the Dundee Institute of Art and Technology, architect, James Wallace, Cardiff; Tally-street—alterations for John Young (Dundee), Ltd., architects, Carver, Symon and Ross, 62, Seagate; Ward-road and North Lindsay-street — alterations for George McLean, architects, Maclaren, Soutar and Salmond, 15, South Tay-street.

EDINBURGH. — RECONSTRUCTION. — Approval was given to plans for the proposed reconstruction of police headquarters in the High-street. The estimated cost of the building works will be about £100,000. Mr. E. J. MacRae, the City Architect, reported that the Scottish Office had approved of the plans.

GLASGOW.—WAREHOUSE.—The premises in Argyle-street formerly owned and occupied by Mann, Byars and Co., Ltd., have been purchased by Marks and Spencer, Ltd., for the erection of a new warehouse building.

GLASGOW.—BUILDING.—The Corporation has approved of the following schemes: School in the Provanmill area at £74,205, and extensions to the Eastbank Academy, Shettleston, at £6,000. A new gymnasium, estimated at £3,000, is to be built at King's Park Amateur Athletic Club. The Corporation is to erect, at £7,500, a new school on a site at Berryknowes, from plans by Mr. William MacCaig, architect, 129, Bath-street. The same architect has prepared plans for extensions to the present St. Philemmas school, at £3,500.

GOLSPIE.—RECONSTRUCTION.—The harbour, for which the Government is to give a grant of £3,720, is to be reconstructed.

HAWICK. — BUILDING. — Providing plans meet with the approval of the Dean of Guild Court, Lyle and Scott, Ltd., hosiery manufacturers, Hawick, propose to erect a new factory in Lynnwood-road. The Dean of Guild Court has granted petitions by Robert Pringle and Son, Ltd., to erect hosiery works and mechanics' workshop and offices, at about £1,600.

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from April 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A¹	A²	A³	B	B¹
Craftsmen.....	1/8	1/7½	1/7	1/6½	1/6	1/5½
Labourers	1/3	1/2¾	1/2¼	1/2	1/1½	1/1½

Aberdeen	A	East Fife (embraced by a line from Largo to Kingsbarns and eastward to the Coast)	B	Hamilton	A
Ayrshire	A			Inverness	*
Banff	B			Inverurie	A¹
Berwickshire	A²	East Lothian	A	Kincardineshire	A²
Bridge of Allan	A	Edinburgh	A	Kinross-shire	A
Broughty Ferry	A	Fifeshire (with the exceptions of towns in East Fife which are under Grade B)	A	Lanarkshire	A
Clackmannanshire	A			Mid-Lothian	A
Doune	A			Monifieth	A
Dunblane	A			Moray and Nairn	B
Dumbartonshire	A			Newport	A
Dumfriesshire	A¹	Forfarshire	A	Peeblesshire	A²
Dundee	A	Glasgow	A	Perth	A
Dunoon	A	Greenock	A	Perthshire	A
				Peterhead	A
				Renfrewshire	A
				Rothesay	A
				Roxburghshire	A
				St. Andrews	A
				Selkirkshire	A
				Stewartry	A¹
				Stirlingshire	A
				Stornoway	A
				Tayport	A
				West Lothain	A

* This town has its own rates: Masons, 1/6; Carpenters, 1/6; Slaters, 1/6, Plumbers, 1/6½; Plasterers, 1/7, but 1/8 is paid owing to the scarcity at present; Painters, 1/6; and Labourers, 1/1½.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 134

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY AND SELECTED GLAZING QUALITY.

	per ft. super.		per ft. super.
16 oz. O.Q.	2½d.	32 oz. O.Q.	5½d.
18 ,, S.Q.	2½d.	32 ,, S.Q.	6½d.
24 ,, O.Q.	3¼d.	Obscured Sheet, 18 oz	3d.
24 ,, S.Q.	3½d.	,, ,, 24 ,,	4½d.
26 ,, O.Q.	3¾d.	Fluted ..... 21 oz.	9d.
26 ,, S.Q.	4½d.	Em'lld 18 oz., 5½d., 24 oz.	6¾d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	Per ft.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ⅛ in.	6½d.
Rough cast double rolled, ¼ in.	6¾d.
Figured rolled, etc., white	6½d.
Figured rolled, etc., tinted.	9½d.
Rolled Sheet	6d.
White rolled cathedral	6d.
Tinted rolled cathedral	8½d.

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	0 10½
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick.	0 9½
"Calorex" Sheet, 21 oz.	2 6
,, 32 oz.	4 0
,, Cast, ¼ in. thick	0 10
,, ,, ⅜ in. thick	1 0
,, ,, ½ in. thick	1 2

"VITA" GLASS.

Clearsheet—not exceeding 1 foot	1 0
,, ,, 2 feet	1 3
,, over 2 feet	1 9
Polished plate not exceeding 1 foot	1 6
,, ,, 2 feet	3 0
Cathedral—not exceeding 1 foot	1 0
,, larger sizes.	1 6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet.	1 0
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide	3 6

LEAD, &c.

	Per ton. £ s. d.
(Delivered in London.)	
LEAD.—Sheet, English, 4 lb. and up	23 0 0
Pipe in coils	22 10 0
Soil pipe	28 0 0
Compo pipe	29 15 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton	£12 15 0

INVERNESS.—At £6,000, the Inverness Golf Club is to erect additional clubhouse accommodation. The Dean of Guild Court has approved of new headquarters at Gordonville-road for the Territorial Army Association, 51, Church-street.

PAISLEY.—The Dean of Guild Court has passed the following plans: Renfrewshire C.C.—additions to the Abercorn Public School; Messrs. Young's Bus Services, Ltd., Paisley—garage with accommodation for 50 buses at Gordon-street; and Mr. J. Steven Milne—12 lock-up garages at Lochfield-road.

SOUTH UIST.—PIER.—A further move in the development of the Hebrides is foreshadowed by the plan being put forward for the construction of a pier at Loch Carnan, South Uist. The cost of constructing the proposed pier will be about £8,000.

STORNOWAY.—HOUSING.—The T.C. have decided to go on with the erection of 88 houses near the site of the last scheme at Manor Park.

TENDERS ACCEPTED

Aberdeen.—120 houses in Anderson-dr. North, for T.C.:—Excavator, mason and concrete, *W. K. McLeod, £25,448 3s. 6d.; carpenter, joiner and ironmonger, *Gray & Bain, £15,636 3s. 9d.; slater and roughcast, *C. McDonald & Sons, Dyce, £3,386 19s. 3d.; plumber, *Andrew McRobb, Ltd., £6,331 12s. 0½d.; lath and plaster, *W. Mason & Son £4,794 17s. 2d.; grates, *James Scott & Son (Aberdeen), Ltd., £1,441 9s.; electrical, *Robert A. Mair, £882 12s. 10d.; painter and glazier work, *Alexander Mackie, £1,505 4s. 3d.

Dumbarton.—Parish church, new halls and offices, for the Drin Chapel, Church of Scotland. Lancelot H. Ross, architect, 221, West George-st., Blythswood, Glasgow. John Danskin & Purdie, quantity surveyors, 241, West George-st., Blythswood, Glasgow:—Excavation, brick and mason—*R. Rodgers & Sons, Ltd., Scotstoun; joinery, carpentry and ironmongery—*Thomas Stewart, Ltd., Largside; steel construction—*Redpath, Brown & Co., Ltd., Glasgow; slater work and roughcasting—*J. McLaren, Glasgow; plumber and sanitary engineering—*J. MacPherson, Glasgow; heating installation and engineering—*J. Boyd & Co., Ltd., Paisley; plaster and lathing and allied—*G. Rome & Co. (Glasgow), Ltd., Glasgow; electrical fittings and installation—*McKerrow & Scott, Glasgow.

Glasgow.—28 houses at Deanholm-dr. housing site. Mr. William MacNab, Housing Architect, Directors' Office nr. Trongate:—Joinery, carpentry and ironmongery, *Direct Labour (Joinery Dept.), £15,586 4s. 4d.

Inverness.—Temporary bridge over the River Ness:—*W. Tawse, Ltd., Aberdeen (about £6,000).

Paisley.—Reconstruction and addition scheme to the Kibble school. Charles Davidson & Son, architects, 27, High-st. Burnie, Murray & Halton, quantity surveyors, High-st.:—Excavation, brick and mason—*J. Bryce & Son; joinery, carpentry and ironmongery—*Matthew Lang & Co., Ltd.; plumber and sanitary engineering—*Hunter & Gowder, Ltd.; slater work and roughcasting, etc.—*C. Wilson, Glasgow; plaster and lathing work, etc.—*A. C. Whyte & Co., Ltd., Pollokshaws; electrical fittings and installation, etc.—*Gowdie Bros., Ltd.; painter and allied works, etc.—*W. Osbourne & Sons, Ltd. (Rest of Paisley.)

Perth.—New academy. A. Watt Allison, architect, York-place, Station-rd. S. C. Stephenson, quantity surveyor, 38, Tay-st., The Inches:—Excavator, brick, concrete and building—*R. Brand & Son, Ltd. Joinery, carpentry and ironmongery—*Stewart & Nairn, Ltd. Plumber and sanitary engineering—*Frew & Stewart, Ltd. Reinforced concrete—*J. Sharp & Son. Roughcasting—*J. Menzies. Slater—*Dow & Shearer, Ltd. Steel construction—*Redpath, Brown & Co., Ltd., Edinburgh. Glazing—*P. & G. MacLeod, Ltd. Railings, gates—*W. Hume & Co. Electrical fittings and installation, etc.—*MacCowan & Guild, Ltd. Asphalt—*The Limmer & Trinidad Lake Asphalt Co., Ltd., Glasgow. Layout, etc., works—*Taylor Bros., Ltd. Plaster and lathing—*J. Sharp & Sons. Heating engineering and installation, etc.—*Taylor & Fraser, Ltd., Glasgow. (Rest of Perth.)

Portobello.—Super Cinema. Thomas Bowhill Gibson, architect, Rutland-sq., Manor-place, Edinburgh:—Excavator, brick and mason, etc.—*W. J. Hendry, Abbeyhill. Steel construction—*Redpath, Brown & Co., Ltd., Edinburgh. Joinery, carpentry and ironmongery—*James Laidlaw & Sons, Ltd., Edinburgh. Glazing and allied works, etc.—*G. Lindsay & Co., Ltd., Edinburgh. Scaffold, etc., works—*Scottish Tubular Co., Ltd., Glasgow. Asphalting work on roof, etc.—*W. G. Walker & Son (Glasgow), Ltd., Glasgow. Asbestos work on roof, etc.—*Turner Asbestos Cement Co., Ltd., Glasgow. Roughcasting and allied works, etc.—*W. J. Henry, Edinburgh. Plaster and lathing works, etc.—*T. G. Woodburn & Co., Edinburgh. Plumber and sanitary engineering—*James H. Inglis & Son, Ltd., Edinburgh. Tile, terrazzo and allied works, etc.—*Toffolo, Jackson & Co., Ltd., Glasgow.

Scotland (H.M.O.W.).—Tenders placed during week ending January 3:—Government Buildings, Stirling District, plumber maintenance work, *J. & J. Duff, Ltd., 31, Dumbarton-rd., Stirling.

TRADE NEWS

Methods of Lighting.

The Benjamin Electric, Ltd., Brantwood Works, Tariff-road, Tottenham, N.17, have recently issued a booklet entitled "Make the most of your Lighting." The booklet points out that there are many ways of installing lighting, there being many factors to consider, and goes on to explain some of them and to illustrate and describe some of the Benjamin range of lighting accessories and fittings.

A Shrine in Manchester Cathedral.

The shrine in the Manchester Regiment Chapel, Manchester Cathedral (illustrated on page 46 of this issue), was erected by Messrs. L. Brown and Sons, of Wilmslow, and the carving was done by Messrs. Earp, Hobbs and Miller, of Manchester. The architect is Mr. J. Hubert Worthington, M.A., F.R.I.B.A. (Messrs. Thomas Worthington and Sons).

Sectional Timber Buildings.

Messrs. David McMaster and Co., Mount Bures Works, Bures, Essex, have issued an illustrated brochure dealing with their comprehensive range of sectional timber buildings. Particular mention is made of the "Master" bungalows, which are claimed to have many advantages over the brick models. Also illustrated in the brochure are loose-boxes, garden shelters, beach huts, an aviary, greenhouse, general purpose shed, lock-up shop, garden furniture and garages.

A New General Catalogue.

A most comprehensive general catalogue, profusely illustrated, has recently been issued by Messrs. Clark, Hunt and Co., Ltd., iron and hardware merchants and manufacturers, 159-161, Shoreditch, London. The publication marks a deviation from the firm's usual practice of publishing sectional price-lists from time to time. Although, owing to the pressure on space, a number of "lines" have unavoidably been omitted, a careful selection has been made to include the more up-to-date patterns, and the firm will be pleased to submit quotations for articles not listed upon request. The catalogue illustrates a wide range of fireplaces, electric fires, heating stoves, domestic boilers, baths and bathroom fitments, locks and latches, cloakroom fittings, fire extinguishers, etc. Some excellent examples of wrought iron railings and gates are shown, two buildings for which the firm have supplied these being the new Main Sorting Office, Liverpool, and Handsworth District Postmen's Offices, Birmingham; Mr. A. Bullock, O.B.E., F.R.I.B.A. (H.M. Office of Works), architect.

Twickenham Technical College and School of Art.

The facing bricks for this building, which was illustrated and described in our last issue, were, we are informed, the golden brown wirecut facings manufactured by the Ibstock Brick and Tile Co., Ltd., and supplied through their London agents, Henry J. Greenham (1929), Ltd., Terminus Building, G.W.R. Depot, Shepherd's Bush, W.12.

The Ibstock Brick and Tile Company, Ltd., also inform us that they have decided to reserve, as and from January 1, the sales of their multi-coloured sandfaced wirecuts, golden brown and grey sandfaced wirecuts and multi-coloured rusticated wirecuts in London and the Home Counties to the following firms: J. Alfred Pratt and Co. (1928), Ltd., 25, Woodford-road, Watford, Herts, and Bush House, Aldwych, W.C.2; Henry J. Greenham (1929), Ltd., G.W.R. Goods Depot, Shepherd's Bush, W.12, and 95, Wellington-street, Slough, Bucks; Builders' Material Association, Ltd., Granby House, Granby-street, N.W.1; W. Creighton and Co., Ltd., Cassiobury Mills, St. Albans-road, Watford, Herts, and W. G. Bennett, Ltd., 77, Victoria-street, St. Albans, Herts.

No alteration has been made in the sales of the firm's hand-made bricks, red pressed facings or red tapped wirecuts, which are obtainable in the usual way.

TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Barnstaple.—8,380 yds. lin. 3-in. asbestos cement pipe, construction of reinforced concrete reservoir, and construction of dam, feed tank, ram house and spring inlet tank, together with works, for Milltown and Muddiford water scheme, for R.D.C. S. P. Smith, E., Red House, Castle-st. Quantities by E.:—

Northcote & Son, Exeter, Devon	£3,774 13 9
—. Sanders, S. Molton	3,480 17 4
Dennis & Son, Braunton, N. Devon	3,294 0 0
Curey & Son, Barnstaple	3,196 9 6
—. Lynch, Barnstaple	3,100 0 0
*H. Quick, Milltown, nr. Barnstaple	2,999 10 10

Bath.—Works, for T.C.:—Repairs to 22, Paragon —*T. A. Hopes & Son, £378. Boundary wall, City of Bath girls' school—*F. J. Amery & Sons, £591 10s. Steel shelving required in connection with the storage of respirators—*Milner's Safe Co., Ltd., London, £185 12s.

Battersea.—Works, for B.C.:—Works Dept. of B.C.—Internal cleansing and painting at tuberculosis dispensary, Southlands, £104 15s.; repairing oak boundary fence at Morden Cemetery, £100; internal cleansing and painting, etc., works at Nine Elms Baths, £324 15s. Works in connection with meter and rental wiring building. Electric House:—Supply and lay patent roof covering—*Frazzi, Ltd., Lennox House, Norfolk-st., W.C.2, £256 9s. 6d. Supply wall and floor tiling, and partition slabs—*British Art Tile Co., Ltd., Terminal House, 52, Grosvenor-gdns., S.W.1, £174 15s. 5d.

Bebington.—24 houses and 14 bungalows on the Grove-st. housing estate, New Ferry, for Council:—*Tottey & Capper, West Kirby, £16,566.

Bingley.—Senior central school and technical institute, for West Riding C.C.:—*E. & T. Bower, Halifax, £87,000.

Birmingham.—Works, for T.C.:—Sanitary fittings, Brearley-st. nursery school—*Pearce & Cutler, Ltd., Birmingham, £137 8s. 6d. Low-pressure hot water domestic installation at (1) Icknield-st., (2) Barford-rd., (3) George-st. West special school—*J. Jackson & Co., Birmingham, at (1) £240, (2) £278, (3) £275. Groundsman's house at George Dixon secondary playing field—*Richard Fenwick (Builders), Ltd., 145, Charles Henry-st., Birmingham, £770. Electric lighting installation at (1) Birchfield-rd., (2) Acocks Green, (3) Clifton-rd., (4) College-rd., and (5) Loxton-st.—(1) and (2) *H. Pratt, Ltd., High-st., Birmingham, 6, £318 2s. and £147 13s.; (3) and (4) *W. J. Sheath, Birmingham, £150 and £149; and (5) *Parker, Winder & Achurch, Ltd., £102 13s. 3d. Formation of isolation cubicles at Summer Hill homes—*West Bromwich Casement & Engineering Co., Ltd., £179. Houses—18, Mill Pool Hill estate, *Alfred Langley, Ltd., Birmingham, £6,066; 14, Lea Hall estate, *Morris, Jacombs & Sons, Ltd., Birmingham, £4,816; 157, Lea Hall estate, *Sherriff & Co., Ltd., £62,130.

Birmingham.—Nurses' home at corner of Ludgate-hill and Lionel-st., for Birmingham and Midland Eye Hospital. E. W. Turner, architect, 109, Exchange-bldgs., Stephenson-pl.:—*P. W. Cox, Ltd., Grove-ln., Handsworth, Birmingham. Scaffolding—*Scaffolding (Gt. Britain), Ltd.

Blackhill, Co. Durham.—72 houses:—*R. Gallagher, Cemetery-rd., Blackhill.

Bolton.—Additions to generating station at Back o' th' Bank, for E.C. H. E. Annett, Electrical Engineer, Generating Station:—Builders—*Wm. Gornall & Sons, Ltd.; asphalt work—*Ragusa Asphalte Co., Ltd., London, W.1; painting—*T. Ball; slating—*J. Hodson, Ltd.; carpenter and joiner—*A. E. Dalzell; plumbing—*T. Howarth; plastering—*F. T. Walsh. (Remainder of Bolton.)

Bradford.—Works, for T.C.:—Electricity sub-station at Wilmer-rd.—‡L. & W. Morrell, 141, Abb Scott-ln., Low Moor, Bradford, £2,572. Transformer station at Station-rd., Manningham—*Wright, North & Son, 267, Leeds-rd., Bradford, £1,041.

Brighton.—Electric lighting, heating and power installation in 17 houses now being erected in St. John's-pl., for C.B. B.E. and S.:—*Hall & Stinson, Sheffield, £220 16s.

Bromsgrove.—Extensions to isolation hospital, for Bromsgrove, Droitwich & Redditch Joint Hospital Board. S. N. Cooke, F.R.I.B.A., architect, Sun-bldgs., Bennett's-hill, Birmingham, 2:—Builders—†J. & A. Brazier, Ltd., Bromsgrove; electrician—†Thomas Glover, Birmingham; engineers—†Ashwell & Nesbitt, Ltd., Birmingham. (Total cost, £34,475 10s. 11d.)

Bury.—Public conveniences at Lime Field, for T.C. John Chadwick, B.E.:—*J. Tinline, Ltd., Parker-st. Saw Mills, Bury.

Bury.—Clearing site and erection of new gas showrooms in Broad-st., for T.C.:—John Chadwick, B.E.:—†James Greenwood, Ltd., Huntley Brook Saw Mills, Bury, £7,358.

Camelford.—Reconstruction and alterations to two cottages at Helstone for R.D.C. A. R. Hansford, S. :—

Francis Dawe, Higher Medrose, Delabole	£327 10
J. Treweeks & Son, Camelford	325 0
*E. J. Keast & Son, Helstone, Camelford	318 10

Colchester.—Works, for T.C. :—Improving swinging berth—*Kenneth Bell, Ltd., £3,981 1s. 3d. (Subject to M.H. consent.) Demolishing buildings on site of the old highways depot, Osborne-st.—*L. Jones & Co., £120, plus £40 cost of fencing, etc.

Coventry.—New secondary school for girls in Dane-rd., for E.C. :—*W. H. Jones & Son, Ltd., Coventry, £49,969.

Coventry.—170 non-parlour houses and 170 tool sheds on Pinley Fields estate, for T.C. A. F. Underhill, Housing Director :—‡Eadie & Co., Ltd., Waterloo-rd., Wolverhampton, £66,678.

Cranbrook.—Alterations and additions to branch premises, High-st., for Westminster Bank, Ltd. Searle & Searle, architects, Paternoster House, Paternoster-row, E.C.4 :—*W. P. Woodgate, High Halden.

Darlington.—Brickwork, floors and turbine block in connection with the power-station extensions, for T.C. :—*R. Blackett & Son, Ltd., £10,637 17s. 6d. (for roofs, floors and machinery bases, together with the building work for the boiler and turbine houses). *Cleveland Bridge and Engineering Co., Ltd., £1,500 (for mass concrete turbo-alternator block).

Derby.—Block of shops and offices at Babington-ln., for Progressive Supply Co., Ltd., 44, Sadler-gate. L. F. Smith, architect, Deacon Bank-chambs., Cornmarket :—*Harlow, Stone and Storer, Ltd., Leacroft-rd., Derby.

Devizes.—Block of 4 cottages at Market Lavington, for R.D.C. :—

Thomas Offer, Devizes	£2,440
Wallis & Co., Wootton Bassett	2,152
F. Burgess, Easterton	1,885
W. G. Hillier-Brown, Littleton Panell	1,710
*Gilmores, Slough	1,690

Draylsden.—Senior school, for Lancashire E.C. H. S. Fairhurst & Son, F.R.I.B.A., architects, 55, Brown-st., Manchester :—*E. Marshall & Sons, Ltd., Stamford Saw Mills, Cockbrook, Ashton-under-Lyne, £70,478.

Dudley.—Police buildings and fire station on a site in Tower-st., for T.C. :—‡J. M. Tate & Son. Ltd., Cradley Heath.

Dudley.—Paint shop, bakery, Nith-pl., for Dudley Co-operative Society, Ltd., Waddam's Pool. Webb & Gray, architects, 200, High-st. :—*J. M. Tate & Son, Highfield-rd., Cradley Heath, Staffs.

Dukinfield.—Extensions to garage in cleansing yard, for P.A.C. E. N. Stannion, B.S. :—*George High, 17, Francis-st., Dukinfield.

Dunmow.—Demolition of 2 steel-framed water towers and wrot-iron tanks at Felstead, for R.D.C. J. H. Nicholson, Council House :—

J. S. Alderton, Felstead	Charge	£300 0
A. L. Winwood, Saffron Walden	,,	180 0
Mitchell & Sons, Ilford	,,	78 0
W. Moore, Wandsworth	,,	53 0
L. Jones, London	,,	40 0
W. Hollingsworth, London	,,	40 0
Chas. Griffiths, Ltd., London	,,	32 0
John McCallum, Willesden	,,	22 10
George Cohen & Sons, London	,,	10 0
D. Barwick, Ilford	,,	10 0
F. Savage & Sons, Kenton	,,	10 0
Demolition Co., Ltd., London	,,	5 0
R. Randall, Abridge	No charge.	
A. M. Wadsworth, Leighton Buzzard	,,	,,
*Henry Strickland, London	Offer to pay	£10 5
A. R. Wright & Son, Leyton	,,	,, 7 10
T. W. Ward, Ltd., Sheffield	,,	,, 6 0
J. Ashton & Sons, London	,,	,, 2 10

East Ham.—Supply and fixing of patent glazing and lantern lights in connection with the alterations and additions at Harts Sanatorium, for C.B. :—‡Williams & Williams, Ltd., £1,121 8s. 9d.

East Riding.—Council school at Hessle, for C.C. B. B. Stamford, County Architect :—Building —*Markwell, Holmes & Harker, Ltd. Heating—*F. & T. Ross, Ltd. E. lighting—*Napier & Wheeldon. (All of Hull.)

Eire.—Contracts placed by Commissioners of Public Works :—New national school at Shannow, Co. Cavan, Reynolds, Ltd., Granard; improvements at St. Patrick's National School, Murlog, Co. Donegal, Larkin Bros., Ltd., Wexford; erection of Cullohil N.S., Laoghise, B. Lyons & Sons, Thurles; erection of Garda station at Rathcormac, J. M. O'Keefe, Mallow.

Enniskillen.—Heating installation in extension at Enniskillen Collegiate school, for Fermanagh Regional E.C. F. G. Townsend, M.Inst.C.E. of I., Courthouse, Enniskillen :—

Musgrave & Co., Ltd., Belfast	£360	0	0
Thos. Crowe, Ltd., Belfast	355	0	0
Wm. H. Forde, Sligo	310	0	0
D. M. Holmes, Londonderry	307	15	0
John Dowling & Sons, Ltd., Belfast	300	0	0
James Rankin, Enniskillen	292	0	0
Johnson & Co., Belfast	290	0	0
William Willis & Co., Belfast	269	0	0
*Bell & Martin, 6, Frederick-st., Belfast	255	6	4

Essex.—Works, for C.C. :—Construction of Ingatestone by-pass—‡Mears Bros. (Contractors), Ltd., £69,782 5s. Construction of 2nd carriageway and other works on Margaretting-Widford section—‡Tarslag (1923), Ltd., £104,588 18s.

Gillingham.—Branch departmental stores, Grange-rd., for Gillingham & District Co-operative Society, Ltd. L. G. Ekins, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd. (Southern Area), 99, Leman-st., E.1 :—*Building Department, C.W.S., London.

Guildford.—Reconstruction of mortuary at Woodbridge isolation hospital, Guildford, for Guildford and Godalming Joint Hospital Board. J. H. Norris & Co., architects, 116, High-st. :—*C. T. Corps, Ltd., Reliance Building Works, Walnut Tree-clo., Guildford.

Haverfordwest.—Improvements to public convenience, St. Thomas Green, for T.C. R. G. Henderson, B.S. :—*Direct Labour.

Hayle.—Electricity generating station, stores, etc., for Cornwall Electric Power Co., Ltd., Carn Brea. Farmer & Dark, architects, 87, Buckingham Palace-rd., London, S.W.1 :—*Carkeek & Co., Ltd., Redruth. (Cost, £100,000.)

Hebburn-on-Tyne.—36 houses. T. A. Page, Son & Bradbury, architects, 75, King-st., South Shields :—*A. V. Clerey & Son, 14, Frederick-st., South Shields.

Hetton.—86 houses at East Rainton, for U.D.C. :—‡G. McCall, New Herrington. £30,995 6s. 3d. (In lieu of previous tender.)

Hull.—Six blocks of rest homes, for Captain F. W. Jones, J.P. P. J. North & H. Andrew, FF.R.I.B.A., architects, Custom House-bldgs., Whitefriargate :—*R. W. & J. H. Barnett, 13, Clarendon-st., Spring Bank, Hull. (Cost, £20,000.)

Kensington.—Repairs to houses, for B.C. :—18, Western-ter.—*H. Turner (Kensington), Ltd., 34, Bramley-rd., W.10, £100 2s.; and 19, Western-ter.—*H. Turner (Kensington), Ltd., 34, Bramley-rd., W.10, £76 7s.; 20, Western-ter.—*J. Worman & Sons, 34, Queensdale-rd., W.11, £136 5s.

Kettering.—Drill hall, for Northamptonshire Territorial Army Association. Sir John Brown & Henson, F. & A.R.I.B.A., architects, 83, St. Giles-st., Northampton :—*Robert Marriott, Higham-rd., Rushden.

Kidsgrove.—Four pairs of single-storey dwellings at 3rd Avenue, for U.D.C. H. W. Crowther-Green, E. and S. :—

Healey & Wightman, Newcastle-under-Lyme	£3,080	13	3
Dickensen, Burslem, Stoke-on-Trent	2,818	10	0
Marsh & Bromley, Chell, Stoke-on-Trent	2,746	8	4
J. W. Walton, Kidsgrove, Stoke-on-Trent	2,721	0	0
W. J. Jones, Middlewich, Ches	2,707	18	0
Lockwood & Sproston, Newcastle-under-Lyme	2,630	10	7
R. A. Heeks, Chesterton, Stoke-on-Trent	2,623	0	0
G. Pownall, Wolstanton, Stoke-on-Trent	2,323	15	0
James Woodward, Newcastle-under-Lyme	1,943	18	0
D. Whalley, Fenton, Stoke-on-Trent	1,827	9	4

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

THE STEEL SCAFFOLDING CO., LTD.

Imperial House, 80, Regent St., London, W.1

Telephone: Regent 1157

Kingston.—Extensions to propagating house at Canbury Gardens, for T.C. :—*William Wood & Son, Ltd., £160 10s.

Kirkburton.—10 houses, Canary Hall, Grange Moor, for U.D.C. :—*Paul Rhodes, Ltd., Park View Works, Cardigan-ln., Leeds, 4, £3,820.

Lewes.—Demolition of the "White Lion" public-house and 2, Westgate-st., for T.C. :—*Burchett & Sons, £5.

Lincoln.—Reconstruction of the Magpie Bridge, for T.C. :—*G. Sunley & Co., Ltd., Brentford, £7,550 5s. 7d.

Liverpool.—Works, for City Council :—Provision of canteen, kitchen, nurses' laundry, shampoo room, etc., at Walton Hospital—*Rimmer Bros. (Liverpool), Ltd., Liverpool, £864. Interior cleaning and painting at Walker Art Gallery—*A. Allsop & Co., 41, Oriel-rd., Bootle, £298. Electrical sub-stations—*Bragg & Collins, Arrad-st., £764, and Seaford-rd., Crosby, £718; *J. Hall & Co., Ormskirk-rd., Maghull, £754, Waddicar-ln., Melling, £640, Liverpool-rd., Woolfall Heath estate, £790; *Robert Myles, Ltd., Deverell-rd., Wavertree, £732 13s. 7d.; *Knight & Lord, Fazakerley-annexe hospital, £693; *Walter Lothian, Burrows-ln., Prescot, £855. Roads and sewers at Speke—*L. Marr & Son, Aspen-gr., Lodge-ln., Liverpool, 8 (estimated at £80,000). Clearing site and erecting building at 18, Car ruthers-st., *Knight & Lord, 2a, Windsor-rd., Liver pool, £477.

Liverpool.—Additions, for Shrewsbury Boys' Club Trustees, 31, Portland-pl., Everton. Woolfall & Eccles, architects, Castle-st. :—*James Tomkinson & Co., Ltd., 22, Rosscommon-st., Liverpool.

Llandudno.—Rebuilding 2, 4 and 6, Gloddaith-av., for proprietors, W. S. Williams & Sons (Llandudno), Ltd., Corner House, North-parade. Harris & Sheldon, Ltd., architects, Stafford-st., Birmingham, 4 :—*Harris & Sheldon, Ltd., Stafford-st. Birmingham, 4.

Llwchwr.—New boardroom at Council offices at Council offices at West-st., Gorseinon, for U.D.C. E. Harris, C. J. Teifion J. Williams :—*D. Sterling Thomas, Swansea, £1,025.

¶London (Air Ministry).—Contracts placed for week ended January 7 :—Various Stations—hutting, Lewisham Timber Co., Ltd., London, S.E.13. Gullane, Eastlothian——builder's work, Stewart McIntyre, Edinburgh, 2. Kinloss, Elgin and Lossiemouth, Elgin—builder's work, Cowiesons, Ltd., Glasgow, N. Pembroke Dock—engine store, alterations and additions to various buildings, Bennett Bros. (Contractors), Ltd., Swansea. Kenton Bar, Co. Durham—hutting, J. Gerrard & Sons, Ltd., Swinton, Manchester.

London (G.W.R.).—Contracts placed :—Supply and erection of two 3-ton electric goods lifts in new transit shed and warehouse at Paddington (New Yard).—*Hammond & Champness, Ltd., Haskins Works, Blackhouse-ln., Walthamstow, E.17. Supply and installation of one 1-ton runway in transit shed and warehouse at Paddington (New Yard)—*Wharton Crane & Hoist Co., Ltd., Reddish, Stockport. Supply and erection of two 3-ton electric goods lifts in new warehouse at Plymouth (Millbay)—*E. A. Foulds, Ltd., Albert Works, Colne. Excavation in connection with provision of sidings for R.A.F. station at Cosford—*Sir Robert McAlpine & Sons (Midlands), Ltd., Liverpool. Provision of heating installation for new carriage lifting and painting shops at Caerphilly—*Colley, Meikle & Co., Ltd., London. Provision of heating installation for new carriage repair shop at Old Oak Common—*G. N. Haden & Sons, Ltd., Trowbridge. Supply of steel girders and other iron and steelwork—*Cleveland Bridge & Engineering Co., Ltd., Darlington.

¶London (H.M.O.W.).—Tenders accepted during week ended January 5 :—P.O. Engineering Depot, Sutton—erection, Commercial Structures, Ltd., Staffa Works, Staffa-rd., E.10. Silver candelabra, Goldsmiths & Silversmiths Co., Ltd., 112, Regent-st., W.1. Linoleum, Barry, Ostlere & Shepherd, Ltd., Forth Works, Kirkcaldy; Dundee Floorcloth & Linoleum Co., Ltd., P.O. Box 42, Dundee, Angus; Linoleum Manfg. Co., Ltd., 6, Old Bailey, E.C.4; Michael Nairn & Co., Ltd., Kirkcaldy, Fife; and Tayside Floor Cloth Co., Ltd., Tayside, Newburgh. Robin Hood's Wells Telephone Repeater Station—erection, F. Pearson & Co., 32, Cemetery-rd., Doncaster. Steel cupboards, Constructors, Ltd., Nickel Works, Tyburn-rd., Erdington, Birmingham, and Vickers-Armstrongs, Ltd., Powder Mill-ln., Dartford. Cheetham Hill Telephone Exchange, Manchester — erection, Normantons, Ltd., 167, Plymouth-gr., Manchester, 13. Copper suction strainers, Samuel Jones & Co. (Engineering), Ltd., Peckham-gr., S.E.15. Index cabinets, The Art Metal Construction Co., 199-203, Buckingham Palace-rd., S.W.1. Royal Ordnance Factory, Bishopton—hot air and cold air plants, Air Control Installations, Ltd., Victoria-rd., Ruislip. Uniform clothing, John Hammond & Co. (1922), Ltd., Enderley Mills, Newcastle, and Hobson & Sons (London), Ltd., 154-164, Tooley-st., S.E.1. Cylinder cupboard locks, The Yale & Towne Manfg. Co., Willenhall. Pembrey Royal Ordnance Factory—water treatment plants, The Permutit Co., Ltd., Permutit House, Gunnersbury-av., W.4, and John Thompson (Kennicott Water Softeners), Ltd., Wolverhampton. Repetition tables, The Successors to Shapland & Petters, Ltd., Raleigh Works, Barnstaple. Bristol P.O. Engineers' Stores, Coronation-pl.—alterations, C. A. Hayes & Sons, Ltd., St. Thomas-st., Bristol, 1. Blackburn Royal Ordnance Factory—piping for compressed air services, Dilworth & Carr, Ltd., Bow-ln. Foundry, Preston. Wimbledon Telephone Exchange—steel casements, etc., James Gibbons, Ltd., St. John's Works.

Wolverhampton. Worcester Employment Exchange—installation of heating apparatus, H. Burlingham & Co., Ltd., The Bridge, Evesham, Worcester. Thetford Post Office, Telephone Exchange and garage—installation of heating and hot water apparatus, The Culver Heating Co., Culver-st., Colchester. Ministry of Labour Government Instructional Centre, Weeting Hall, Brandon—two sewage ejectors, compressors, electric motors, etc., Adams-Hydraulics, Ltd., Peasholme Green, York. Victory House, Kingsway, W.C.2—external and internal painting, Sykes & Son, Ltd., 10, Essex-st., W.C.2.

¶London (Local Military Commands).—Contracts placed during the month ended December 31:—Biggin Hill—various buildings, T. W. Palmer & Co., Merton Abbey Iron Wks., Church-rd., Merton Abbey, S.W.9. Woolwich Military College of Science—erection of temporary lecture rooms and office, Old Forge Estates, Ltd., 2, Hadlow-chambs., Hadlow-rd., Sidcup. Kingston-on-Thames—miniature range, barracks, Saunders (Contractors), Ltd., 4a, Church-rd., Burgess Hill. Canterbury—conversion of stores, etc., into lecture rooms, H. Goodsell, 32, Sandling-rd., Maidstone. Lydd—excavation, W. F. Rees, Ltd., 39, Victoria-st., London, S.W.1. Catterick—A.P.M.'s office and store, conversion of existing stables to garages for military police, G. Dougill & Sons, Chesnut-st., Darlington. Derby—Normanton Barracks, central heating and boiler plant, Wm. Freer, Ltd., 36, Wellington-st., Leicester. Woodhouselee—shooting range, McKean & Co., 147, West Regent-st., Glasgow. Dosibreatle—certain structures, Stewart, McIntyre & Co., Ltd., 42, Frederick-st., Edinburgh. Rosyth—certain structures, George Smith & Sons, Dunniker-rd., Kirkcaldy. Mire End Farm—certain structures, George Smith & Sons, Dunniker-rd., Kirkcaldy. Kirkliston—steelwork, and Haddington—steelwork, Redpath, Brown & Co., Ltd., St. Andrew Steelworks, Edinburgh. Kirkliston—certain structures, Stewart, McIntyre & Co., Ltd., 42, Frederick-st., Edinburgh. Maryhill Barracks—steelwork, and Falkirk—steelwork, Glasgow Steel Roofing Co., Ltd., 343, Balmore-rd., Glasgow. Renfrew—steelwork, Fleming Bros., 49, Bath-st., Glasgow. Box—certain structures, F. R. Hipperson & Son, 6, Broad Street-pl., London. Ladybank—steelwork, Fleming Bros., 49, Bath-st., Glasgow. Aberdeen, Gordon Barracks—resurfacing parade ground, William Tawse, Ltd., Angusfield, Aberdeen. Aldershot, Buller Barracks—extensions to R.A.S.C. H.Q. offices, Crosby & Co., Ltd., South-st., Farnham. Aldershot—alterations and additions to R.A.V.C. establishment, R. Holford & Co., Ltd., Imperial Wks., Guildford. Aldershot, Mandora Barracks—conversions, bath-house and cookhouse to bath-house and drying-room, Lee Bros. (Aldershot), Ltd., High-st., Aldershot. Aldershot, Mandora, Maida, Corunna, Barrosa and Albuhera Barracks—improvements to sergeants' mess, R. Holford & Co., Ltd., Imperial Wks., Guildford. Lancaster—repairs to roads, Bituminous Surfacing, Ltd., 7, Lime Bank-st., Manchester. Eastriggs C.O. Depot—offices, Cleghorn & Co., Ltd., Burgh-rd., Carlisle. Branston C.O. Depot—concrete roads, A. Holmes & Sons, Ltd., Dallow Bridge, Burton-on-Trent. Mesanee and Hyderabad Barracks—installation of lavatory basins, etc., at officers' messes, Culver Heating Co., Culver-st., Colchester.

¶London (War Office).—Contracts placed during the week ending January 5:—Manorbier—roads and cattle gratings, Tarmac, Ltd., Wolverhampton. Barlow, nr. Selby—boiler plant and central heating, Saunders & Taylor, Ltd., Trafford Park, Manchester. Lydd—construction of roads, G. Wimpey & Co., Ltd., 27, Hammersmith-gr., London, W.6. Sittingbourne—store shed, Rice & Son, Ltd., Margate. Irvine—paint, etc., shed, Wm. Paton & Sons, Ltd., 19, Kyle-st., Ayr.

Londonderry.—Chapel and central block at St. Columb's College:—*James Gallagher & Sons, Londonderry, £30,000.

Luton.—Offices for Weights and Measures Department, Barton-st., for T.C.:—*A. G. Peck, 7, Wenlock-st., Luton, £3,700.

Manchester.—Works for the T.C.:—Alterations and additions to heating installations at New Moston municipal junior mixed school:—*John Turton & Sons, Ltd., Manchester; heating installations at Chorlton high school for boys, *Emmett & Smith, Manchester; extensions to College of Technology (Bradshaw Gass & Hope, architects, 19, Silverwell-st., Bolton):—Carpenter and joiner, *E. Taylor & Co., Ltd., Littleborough, nr. Rochdale (in lieu of tender withdrawn); erection of roof slabs, roof beams, main columns, intermediate columns, and foundations in reinforced concrete for new motor 'bus garage on Wythenshawe estate, *J. A. King & Co., Ltd., London; (a) new heating installation, (b) alterations and additions to electrical installation at the Mobberley boys' school: (a) *John Turton & Sons, Ltd., Manchester; (b) *N. C. Bailey & Co., Ltd., Manchester; six shops, Hollyhedge-rd.: *Moston Brick & Building Co., Ltd., Kenyon-ln., Moston, Manchester; additions to existing school at the Old Hall Drive municipal senior school: Builders, *E. Taylor & Co., Ltd., Littleborough, £42,983; slating, *Manchester Slate Co., Ltd., Ardwick; plumbing, *A. J. Heron & Sons, Ltd., Moss Side; plastering, *W. J. Roberts & Son, Ltd., Ardwick; painting, *A. & J. W. Lord, Rochdale; masons, *Walmsley & Sons, Ardwick.

Manchester.—Offices and caretaker's flat at Fountain-st. and Concert-ln., for Britannic Assurance Co., Ltd., Broad-st. Corner, Birmingham. Cruickshank & Seward, architects, 16, Princess-st.:—Builders—*R. Carlyle & Co., Ltd.; plumbing and glazing—*J. A. McCrea & Sons, Ltd.; steel windows—*Doodson & Bain, Ltd.; pavement lights—*Alexander Lees, Ltd.; granite—*William Kirkpatrick, Ltd. (All of Manchester.)

Mansfield.—Drill hall and headquarters, for Nottinghamshire Territorial Army and Air Force Association. Cyril F. W. Haseldine, F.R.I.B.A., architect, Halifax House, Milton-st.:—Site works—*Greenwoods (Mansfield), Ltd., 2, Wood-st., Mansfield.

Melton Mowbray.—Depot on north side of railway, at Cattle Market, Scalford-rd., for U.D.C. W. H. Jarvis, E. and S., Egerton Lodge. Quantities by E. and S.:—

H. Holroyd	£2,366 14 8
E. H. Clarke	2,269 11 3
T. Denman & Son	2,120 0 0
F. D. Goodwin	2,018 7 9
*E. Clarke & Sons, Ltd.	1,989 0 0

(All of Melton Mowbray.)

Newcastle (Staffs).—Works for T.C. Hollow tile floors and reinforced concrete and beam casing for shops and offices in High-st.:—

Kleine Co., Ltd., London	£2,463 16 7
Concrete, Ltd., Leeds	2,442 0 0
Siegwart Floor Co., Ltd.	2,340 0 0
Cooper Bros., Ltd., Macclesfield	2,235 0 0
Helical Bar & Engineering, London	2,147 3 4
Diespeker & Co., Ltd., London	2,107 13 9
*Caxton Floors, Ltd., Horseferry House, London, S.W.1	2,045 0 0

Heating hot water and ventilation systems to shops and offices in High-st.:—

Etna Lighting & Heating Co., Ltd., Birmingham	£2,001
Brightside Foundry & Engineering Co., Birmingham	1,530
Saunders & Taylor, Ltd., Manchester	1,473
Seymour Sweet & Co., Ltd., Birmingham	1,352
*Henry Hope Heating Co., Smethwick, Birmingham	1,269
Wm. Truswell & Son, Newcastle-under-Lyme	1,136
Edgar Fitton & Co., Ltd., Manchester	1,131

Oakengates.—Public convenience, with drainage, paths and other works, for U.D.C. S. Lees, E. & S.:—

J. Blakemore, Oakengates	£699 0
G. England, Oakengates	669 0
T. France, Trench, nr. Wellington	585 0
*F. Turner, Fallings Park, Wolverhampton	562 10

Pershore.—21 houses, for R.D.C.:—7 houses at Little Comberton—*E. T. Lee, Worcester, £2,556. 6 houses at Hill and Moor—*Perks Bros., Eckington, £2,505 19s. 6d. 4 houses at Peopleton—*T. A. Simpkins, Pershore, £1,526 4s. 2 houses at Cropthorne—*T. A. Simpkins, £798 7s. 2 houses in Head-st., Pershore—*Perks Bros., £849.

Portsmouth.—Works, for T.C.:—Alterations and additions to Flying Bull-ln. boys' school. Adrien J. Sharp, L.R.I.B.A., City Architect. Quantities by C. W. Ball & Son, registered architects and surveyors, 42, Commercial-rd.—

L. Hoad, Southsea	£3,695
Frank J. Privett, Ltd., Southsea	3,546
Patching & Co., Worthing	3,521
Rice & Son, Ltd., Brighton	3,460
Payne Bros., Portsmouth	3,420
John Lay & Co. (Portsmouth), Ltd., Portsmouth	3,419
Samuel Salter (Portsmouth), Ltd., Southsea	3,353
Tanner Bros. (Builders, Southsea), Ltd., Southsea	3,323
E. & A. Sprigings, Southsea	3,000
*Henry Jones & Son, Broad-st., Somers-rd., Southsea	2,969

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Rebuilding of Blind Persons' Shop, 182, Fratton-rd. Adrien J. Sharp, L.R.I.B.A., City Architect. Quantities by City Architect—

Frank Sandell & Sons, Ltd., Worthing	£2,951 0
Patching & Co., Worthing	2,798 0
Rice & Son, Ltd., Brighton	2,780 0
Henry Jones & Son, Southsea	2,740 0
The City Engineer, Portsmouth	2,687 10
L. Hoad, Southsea	2,677 0
Samuel Salter (Portsmouth), Ltd., Southsea	2,639 0
A. H. Healy, Portsmouth	2,610 0
A. E. Porter & Son, Ltd., Portsmouth	2,599 0
E. & A. Sprigings, Southsea	2,594 0
P. W. Wilkins & Son, Ltd., Torquay	2,550 0
Brinton (Builders), Ltd., Worthing	2,453 0
*Tanner Bros. (Builders, Southsea), Ltd., 15a, Castle-rd., Southsea	2,445 0

Rochdale.—Internal painting of 310 houses, Brimrod estate, for C.B. S. H. Morgan, M.Inst.C.E., B.S.:—*A. Sharrocks, 229, Spotland-rd., Rochdale.

St. Pancras.—Works, for B.C.:—Renewing all brickwork to flare pits, flues, bearer walls, floors, seating blocks and external wall to No. 3 boiler at the Whitfield-st. baths—

W. T. Lawrence & Son	£313
Holland & Hannen and Cubitts, Ltd.	294
Sims & Sims	292
Marchant, Hirst & Co.	265
J. H. & W. Heal, Ltd.	248
Whitbys, Ltd.	223
W. R. Catchpole	203
Goddard & Phillips	200
*A. J. Thompson & Co. (London), Ltd.	157

Electric heating apparatus for new electricity distribution offices in Pratt-st., Camden Town—

General Electric Co., Ltd. (panel)	£751 17 6
Concealed Heating Co., Ltd. (panel)	483 4 7
British National Electrics, Ltd. (tubular)	177 13 0
General Electric Co., Ltd. (tubular)	166 0 0
Unity Heating, Ltd. (tubular)	163 10 5
*Unity Heating, Ltd. (convector)	156 18 9
Falk, Stadelmann & Co., Ltd. (tubular)	128 10 0

Salisbury.—Omnibus station and offices, for Wilts & Dorset Motor Services Co., Ltd. Michael Harding & Elgar, architects, 65, New-st.:—*H. & J. Taylor (Contractors), Ltd., Canada House, Hither Green-rd., S.E.13.

Scunthorpe.—Brick buildings in connection with highways and waterworks depots, Station-rd., for T.C. W. Farrar, Assoc.M.Inst.C.E., B.E. and S.:—†G. W. Green, Bottesford-rd., Ashby, Scunthorpe.

Sheffield.—Works for T.C. Staff residences at Fir Vale House Institution, *Public Works Dept., £850; (a) demolition of property in Harvest-ln., Malthouse-ln., Alton-st., Apple-st., Pheasant-yd., Stancer-st., Dutch-st., Rowland-st., Wilson-st. and Mowbray-st.; (b) demolition of Albert Hall, *J. Smith, Sheffield, (a) £625, (b) £700.

Electric light installation at 4 new ward blocks and laundry at Lodge Moor Hospital, *Electricity Dept., £780 16s. 8d.; (a) electric light installations, (b) panel heating at maternity and child welfare centre and relief stations, (a) *Electricity Dept., £568 11s.; (b) *Rosser & Russell, Ltd., Leeds, £2,317.

Sheffield.—Extension to hospital, for T.C. City Architect:—*Thos. Roper & Sons, Ltd., Sheffield, £9,735.

Skipton.—Covered concrete reservoir, Gargrave, for R.D.C. A. Rodwell, E. and S., Granville-st. (with Messrs. Mouchell, reinforced concrete specialists):—*Drake Bros., Haslingden, £8,527.

Skipton.—Conveniences at Cross Hills, for R.D.C. A. Rodwell, S. Quantities by S.:—*John Barrett, Cross Hills, Keighley, £502 17s. 7d.

South Shields.—Hotel at Simonside, for Calders, Ltd., Newcastle-on-Tyne. T. A. Page, Son & Bradbury, architects, 75, King-st.:—*Carruthers & Son, 1, Heugh-ter., South Shields.

Southampton.—Drill halls at Millbrook, for Territorial Army Association of Hampshire and the Isle of Wight. Guttridge & Guttridge, architects, 9, Portland Street, Southampton:—

Jenkins & Sons, Ltd.	£42,958 0 0
Fredk. Cope & Co., Ltd.	42,302 0 0
Hales Bros.	41,962 0 0
John Lewis Bldg. Co.	41,470 0 0
J. J. Udall's Building Co., Ltd.	40,978 0 0
J. Bates & Sons	40,219 12 1
H. Stevens & Co., Ltd.	39,771 0 0
Brazier & Son, Ltd.	39,568 0 0
A. G. Saunders, Ltd.	39,099 13 3
Wm. T. Nicholls, Ltd.	38,975 5 0
The Demolition & Construction Co., Ltd.	38,774 0 0
A. E. Jukes & Son, Ltd.	38,769 0 0
J. F. Gamble & Sons, Ltd.	38,680 0 0
G. E. Prince & Son	38,250 0 0
F. Kimber & Son	36,667 0 0
*Rice & Son, Ltd.	36,531 15 4

Southampton.—Construction of major portion of basement and foundations of a new building to be erected on the east side of Queen's-bldgs., and certain other works, for Edwin Jones & Co., Ltd. Healing & Overbury, chartered architects, surveyors, Rodney Lodge, Rodney-rd., Cheltenham:—*H. Stevens & Co., Ltd., Millbank Wks., Northam, Southampton.

Southampton.—Extension to premises, Hamble, for Air Services Training, Ltd. Green & Rugeley, architects, 39, Portsmouth-rd., Woolston :—*H. G. Ross & Sons, Ltd., Netley.

Stoke-on-Trent.—Sub-station at Bucknall cross roads, for T.C. :—*W. Leake & Co., Sneyd Green, £818 9s. 11d.

Sunderland.—Maternity and child welfare centre, Outram-st., for T.C. J. E. Lewis, B.E. :—*J. Carter & Sons, Ltd., School House, Deptford-ter., Sunderland. (Cost, £10,000.)

Sunnybrow.—50 houses, for North-Eastern Housing Association, Northumberland-rd., Newcastle-on-Tyne. Wetherell, Dent & Pickersgill, architects, Lloyds Bank-chambs., Barnard Castle :—*J. Thorne, Rosemead-av., Willington, Co. Durham.

Swansea.—Internal painting of cottages, for C.B. :—*Borough Architect, £250.

Swinton and Pendlebury.—Electricity sub-station, for E.C. :—*H. Smith, 44, Folly-ln., Swinton, £340.

Tottenham.—Works at St. Anne's branch library, for T.C. :—Electrical work—*Works Dept., £427 1s. Heating installation—*Brightside Foundry Co., £1,140 4s.

Tunbridge Wells.—Nurses' Hostel, Kent and Sussex General Hospital, for Board of Management. Cecil Burns, F.R.I.B.A., architect, Stone Lodge, Vale-rd., Tunbridge Wells. Drower & Son, quantity surveyors, 28, Victoria-st., S.W.1 :—*E. Punnett & Sons, Ltd., Tilehouse Wks., Tonbridge.

Twickenham.—Works, for T.C. :—

Office building, York House—	
G. Hayward & Co., S.E.4	£1,760 0
James Rugg & Son, Ltd., S.W.5	1,397 10
Harrison Smith Buildings, Ltd., Birmingham	1,150 10
W. B. Potter, Twickenham	1,115 0
Boulton & Paul, Ltd., Norwich	1,034 0
W. Hillier & Sons, Ltd., East Sheen	1,026 9
Chas. Sayers & Son (Mitcham), Ltd.	1,010 0
Allen A. Kilfoyle, Molesey	998 0
William Harbrow, Ltd., S.E.16	957 0
Roger Miller, Hounslow	942 0
T. Rutter & Son, S.E.	937 0
Thames Steam Saw Mills, Ltd., Erith	926 10
Audax (Builders), Ltd., W.1	925 0
W. Wood & Son, Ltd., Taplow	899 8
*Watling, Ltd., Phœnix-wharf, Rochester	790 0
Reconstruction of the refuse disposal works—	
Petrie & McNaught, Ltd.	£21,644
*Heenan & Froude, Ltd.	18,015
Carrier Engineering Co., Ltd.	17,755

Wallasey.—Works for T.C. Four police sub-stations at Poulton-rd., Oakdale-rd., Hose Side-rd. and Marine-promenade, *Bennett Bros., Station-rd., Hoylake, £1,043; heating and hot water installations at isolation hospital at Mill-ln. (Ernest Griffiths & Son, engineers, 23b, The Temple, Dale-st., Liverpool) :—*G. N. Haden & Sons, Ltd., 31, James-st., Liverpool, 2, £11,149.

Walsall.—Hotel, Harden-rd., for Holt Brewery Co., Ltd., High-st. Brewery, High-st., Birmingham. Jeffries & Shipley, architects, Kings-ct., Bridge-st. :—*Deacon & Boardman, Ltd., Algernon-st., Walsall.

Wandsworth.—Works, for B.C. :—Interior painting at houses—*H. & P. Matthews, 143-163 (odd), and 50-78 (even), Welham-rd., Furzedown estate, £190; *H. & P. Matthews, 158-228 (even), and 175-241 (odd), Nimrod-rd., Furzedown estate, £477. Messroom at Garratt Park Depot—*Walker (Tooting), Ltd., £188.

Warminster-Westbury.—Pair of houses at Hinton and pair at Keevil :—*F. H. Biddiscombe, Trowbridge, £860 and £955.

West Bromwich.—Rebuilding the "Red Lion" hotel, Sandwell-rd., for Ind, Coope & Allsopp, Ltd., Station-rd., Burton-on-Trent. Scott & Clarke, LL.R.I.B.A., architects, Regent-chams., High-st., Wednesbury :—*J. R. Deacon, Lombard-st., Lichfield.

Whickham-on-Tyne.—120 houses at Dunston, Swalwell and Sunniside, for U.D.C. Thomas Fenbow, S. :—*Direct Labour.

Witney.—Houses, for R.D.C. :—Northleigh (7) and Bampton (6) *Bartlett Bros., Witney, £6,096. Eynsham (14) *P. G. Capel, Oxford, £6,200.

Wolverhampton.—Extensions and adaptations at Hordern-rd. Council school, for E.C. :—*McKeand, Smith & Co., Ltd., Wolverhampton, £26,919.

West Bromwich.—Maternity block at Hallam hospital, for T.C. :—*J. & F. Wootton, Ltd., Bloxwich, Walsall, £17,125.

York.—Extensions to Acomb council infants' school, for T.C. :—*W. Birch & Sons, Ltd., £1,672.

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